



LOWER COLUMBIA COLLEGE

The Smart Choice!

2016-17 CATALOG



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Welcome to LCC!

Getting Started at Lower Columbia College - First Steps for New Students

1. **Apply for Admission** - no fee to apply!
 - Apply **online** or in person at the LCC Entry Center
 - Returning to LCC? If it's been 2+ years you will need to re-apply
 - Apply online at lowercolumbia.edu/apply
2. **Apply for Financial Aid** - submit your FAFSA at fafsa.ed.gov.
 - A completed FAFSA makes you eligible for grants, loans and scholarships
 - Need extra help? Workshops/appointments are available - call 360.442.2330
 - Find more information, visit lowercolumbia.edu/financial for instructions and forms
 - You may be eligible for additional assistance - visit startnextquarter.org to find out
3. **Determine your Program of Study** - LCC offers a wide variety of certificates and degrees
 - Undecided? Meet with a Career Specialist - call 360.442.2330
 - For a complete list of programs visit lowercolumbia.edu/programs
4. **Practice and take a Placement Test** - required for math and English placement.
 - For testing hours and information visit lowercolumbia.edu/placement or call 360.442.2353
 - Get sample tests and practice materials at lowercolumbia.edu/placement
5. **Transfer any credits earned elsewhere to LCC** - keep your credits!
 - Send your official transcript to LCC Registration
 - Fill out and submit a Transcript Evaluation Request
 - For more information visit lowercolumbia.edu/transcripts
6. **Attend New Student Orientation** - required for all new and returning students.
 - Get the tools you need to be a successful student
 - Register for your classes at the orientation
 - Advisors will be available on-site
 - Call 360.442.2353 to sign up
7. **Pay your Tuition and Fees** - tuition due dates posted on the Academic Calendar.

- Check your status in the Financial Aid Portal
- For more financial aid information visit lowercolumbia.edu/financial
- Enroll in a Payment Plan lowercolumbia.edu/payment-plan
- Pay in person, by phone, or online at lowercolumbia.edu/payment-options

At LCC we are committed to helping you succeed. Please do not hesitate to contact the Entry Center at 360.442.2311 with any questions or concerns you may have. We look forward to welcoming you to the Lower Columbia College community!

Academic Calendar

Summer Quarter 2016

First day of classes: July 5
 Last day of classes : August 25
 Final Exams: Last day of class
 Quarter Break: August 29-September 16*

Fall Quarter 2016

First day of classes: September 19
 Veteran's Day Holiday: November 11
 Thanksgiving Holiday: November 24-25
 Last day of classes: December 2
 Final Exams: December 6-8
 Quarter Break: December 9-30*

Winter Quarter 2017

First day of classes: January 3
 MLK Day Holiday: January 16
 Presidents' Day Holiday: February 20
 Last day of classes: March 10
 Final Exams: March 14-16
 Quarter Break: March 17-31*

Spring Quarter 2017

First day of classes: April 3
 Memorial Day Holiday: May 29
 Last day of classes: June 9
 Final Exams: June 13-15
 Commencement: June 16
 Quarter Break: June 19-July 4*

*LCC employees: please see the **Faculty & Staff Calendars Page** for more detailed information including instructional prep days, etc.

Summer Quarter 2017

First day of classes: July 5
 Last day of classes: August 24
 Final Exams: Last day of class
 Quarter Break: August 25-September 15*

Fall Quarter 2017

First day of classes: September 18
 Veteran's Day Holiday: November 10
 Thanksgiving Holiday: November 23-24
 Last day of classes: December 1
 Final Exams: December 5-7
 Quarter Break: December 8-January 1

Winter Quarter 2018

First day of classes: January 2
 MLK Day Holiday: January 15
 Presidents' Day Holiday: February 19
 Last day of classes: March 9
 Final Exams: March 13-15
 Quarter Break: March 16-30*

Spring Quarter 2018

First day of classes: April 2
 Memorial Day Holiday: May 28
 Last day of classes: June 8
 Final Exams: June 12-14
 Commencement: June 15
 Quarter Break: June 18-29*

*LCC employees: please see the **Faculty & Staff Calendars Page** for more detailed information including instructional prep days, etc.

Enrollment Information

Admission

info@lowercolumbia.edu - 360.442.2311

All new students must apply for admission. Students interested in taking classes at LCC can find helpful information online at lowercolumbia.edu/apply or on campus at the Admissions Center. The Entry Center staff provides information on enrolling for classes, placement testing, programs and courses, GED testing, and advising. More information about getting started is also available on the **Welcome page** of this catalog located at lowercolumbia.edu/publications/catalog-16-17/getting-started/welcome.

Advising

info@lowercolumbia.edu - 360.442.2370

Academic advising is a valued and trusted service on our campus. Students receive information, support, and guidance from program and entry advisors while planning their education. Advisors are assigned based on their knowledge in the student's stated area of interest, field of study and career path. Advisors provide information about general college programs and procedures, plus advise on specific course selection.

Students who plan to earn a degree or certificate at LCC or who plan to transfer to a baccalaureate institution must meet with an advisor before registering for classes each quarter. All new students get to attend a New Student Orientation and can sign up for a session at the testing window in the Admission Center.

Current students contact their program advisors (usually a faculty member) to plan a schedule and receive their quarterly online registration PIN. Assistance with contacting an advisor is available from the Entry Center. Program planners for most programs are available online at lowercolumbia.edu/programs.

Students not planning to earn a degree or to transfer may still request help from an advisor through the Entry Center.

Entry Center

info@lowercolumbia.edu - 360.442.2311

The Entry Center provides enrollment information and general help to get started at LCC. New student advising is coordinated through the Entry Center, located in the Admissions Center. Returning students may also request program advisor information at the Entry Center.

High School and Younger (Special Admissions)

Current high school students may enroll in LCC courses with the approval of their high school principal and an LCC counselor or through the Running Start Program. See the High School Diploma, Running Start, and Tech Prep sections of this catalog for information about enrolling in LCC through these programs. Students younger than high school age should contact the LCC Registrar to begin the special admission process.

International Student Admissions

lowercolumbia.edu/international
 - international@lowercolumbia.edu - 360.442.2313

LCC welcomes students from around the world! New applications are accepted year-round for Fall, Winter, Spring, or Summer Quarter.

To be considered for admission to LCC, international student applicants must submit the following to the International Student Programs Office:

1. International Student Application
2. Copy of Passport
3. Proof of Finances
4. Official Transcripts from high schools, other colleges or universities, or language programs*
5. \$50 Application Fee

Transfer students and students requesting change of visa status must also submit the following:

1. Copy of Passport including I-94 and U.S. Visa pages
2. Copy of current I-20
3. Transfer-In Form

When all required documents have been received, the applicant will be considered for admission. If approved for admission, the applicant will receive an I-20 and acceptance packet by mail.

International students must complete at least 12 credits per term and earn a minimum GPA of 2.00 to maintain F-1 visa status and satisfactory academic standing at LCC. International students must pay all tuition and fees by the deadlines set forth by the Registration Office. International students must also provide proof of health insurance, including repatriation coverage, while enrolled at LCC.

*Foreign Transcript Evaluation: Students submitting transcripts from schools outside of the U.S. must have their transcripts translated and evaluated, on a course-by-course basis, by any member agency of the National Association of Credential Evaluation Services (www.naces.org).

New Student Orientation

info@lowercolumbia.edu - 360.442.2311

New LCC students participate in a New Student Orientation session that provides strategies for college success. Students learn where to find helpful resources both on campus and on the LCC website. While at NSO students not only learn to navigate our campus but are provided everything necessary to prepare for the first day of college. In NSO students will register for their first quarter classes and leave with all the information needed to be start their college journey. New students sign up for a New Student Orientation at the testing window in the Admission Center or call 360.442.2353

Placement Assessment

lowercolumbia.edu/placement - 360.442.2311

Students who plan to earn a degree or certificate at LCC, or who plan to transfer to a baccalaureate institution, must take the placement assessment or equivalent before enrolling. Placement assessments in reading, writing, and mathematics help students select the right courses to match his or her needs and interests.

LCC uses multiple measures to determine course placement. Results and course recommendations are typically provided immediately upon completion of the testing session. Advisors use these placement results and course recommendations to help students plan their class schedules. Placement recommendations must be followed, although a student may re-test once if a placement assessment is used for course placement. Additional measures used for placement include college courses, Smarter Balanced Assessment, High School

Transfer Agreements (HSTA) or Transitional Studies test completion.

Placement assessments are offered Monday through Thursday on a walk-in basis.

Purchasing Textbooks & Supplies

lowercolumbia.edu/bookstore - 360.442.2240

Lower Columbia College Bookstore, located in the Student Center, sells both textbooks and supplies required for LCC classes. Students can order books online at lowercolumbia.edu/bookstore.

Registration

registration@lowercolumbia.edu - 360.442.2370

New students register for classes in their new student orientation session. In future quarters, students can register online after meeting with their program advisor and obtaining a quarterly registration PIN. The Registration Office is located in the Admissions Center.

Registration dates and deadlines are published in the quarterly LCC Class Schedule available online, by mail and on campus before each quarter's registration period begins. Registration at LCC is prioritized so that degree- and certificate-seeking students nearest to graduation, who have met with their faculty advisors, register before newer students. Students should discuss alternative classes with their advisors since some of the classes may fill before their registration time. Online registration is available to continuing students.

To access records and to conduct other business online at lowercolumbia.edu/online-services; students need a Student ID number and Global PIN. To access their quarterly registration appointment date and time, students will need their Student ID number and Global PIN. This information is provided by the Registration Office.

Currently enrolled students will meet with their program advisor prior to registering each quarter. Program advisors provide a quarterly PIN number, needed to access the online registration system.

Students placed in the incorrect English, Human Development, Mathematics and Physical Education classes are allowed to make changes through the tenth day of instruction.

Complete registration details and deadlines are published in the quarterly LCC Class Schedule available online, by mail and on campus.

Schedule Changes

Students can change their scheduled classes after registering as follows:

- Online through the third day of each quarter OR

- In person by completing a Change of Registration form at the Registration Office by the published deadline.

Students receiving financial aid funding must consult the financial aid office prior to making any schedule changes.

Withdrawal

Students may withdraw from some or all of their classes through Friday of the eighth week of the quarter. If the class ends before the end of the quarter, a student may withdraw through the last day of class. If a student stops attending a class without officially withdrawing, he or she will remain on the roster and receive a grade accordingly.

To officially withdraw, a student must obtain a withdrawal form from the Registration Office, consult with the instructor if possible, consult with the Financial Aid office if receiving aid, and return the completed form to the Registration Office.

Students who complete the withdrawal procedure after the 10th day of classes will receive a grade of W ("withdrawal") for the course. Students suspected of academic dishonesty may not withdraw from a course to avoid consequences resulting from academic dishonesty until there is a resolution through the student conduct process.

Students who don't attend any classes during the first five instructional days of the quarter, or contact the instructor, may be withdrawn from the class(es). Students withdrawn in this manner will receive a grade of V (instructor-initiated withdrawal) for the course(s).

Students are responsible for understanding the impact of withdrawing on their financial aid. Students are encouraged to review the **Financial Aid Handbook** or visit the Financial Aid office for information.

Financial Aid

lowercolumbia.edu/finaid - 360.442.2390

See also: **Financial Aid Handbook**

More than half of LCC students receive some form of financial aid. These funds can be used to pay tuition and fees as well as other expenses such as books, supplies, rent, transportation, and other living expenses.

Who is eligible?

To qualify for Financial Aid a student must:

- Have a high school diploma or GED
- Be a U.S. citizen or eligible non-citizen

- Be registered with Selective Service (if required)

Other eligibility issues may be identified in the application process.

What financial aid is available?

Grants—Grants are need-based aid that generally does not have to be repaid. They include: Federal Pell Grant, Federal Supplemental Education Opportunity Grant (FSEOG), and Washington State Need Grant, College Bound Scholarship and Passport to College.

Work-Study Employment—Students can request a work-study job as part of their Financial Aid package. LCC staff will help students determine their eligibility. Students may work on or off campus for up to 19 hours a week while attending school. LCC participates in both the federal and state work-study programs. A limited number of student help jobs are also available. More information is available on the **Student Employment** webpage.

Loans—LCC offers Federal Direct Loans and parent (PLUS) loans up to the cost of attendance. The maximum loan amount awarded depends on student need, dependent status, and year in college. Students must complete loan counseling, a master promissory note and submit a loan worksheet. PLUS applicants use a separate loan application. For more information, contact the student loan coordinator at 360.442.2393

Scholarships—LCC's online scholarship application system allows students to apply for multiple scholarships with a single application. Awards vary from \$500 to \$5,000. Scholarship applications are typically available during spring quarter for the upcoming academic year. More information is available at lowercolumbia.edu/scholarships.

Veterans—Resident veterans who served in a combat zone or who provided direct support to American soldiers in a combat zone may qualify for special tuition rates and other financial aid. Assistance with completing the process to apply for college funds, veteran's health benefits and other help is provided by the Veterans' Affairs Coordinator's office. To get started, veterans need Copy #4 of their DD Form 214, Report of Separation from Active Service. For more information, contact the Veteran's Office at 360.442.2395.

How to apply

Students apply for financial aid online through the LCC website. Computers are available for student use in the Admissions Center. Priority deadlines are set for each quarter to allow 3-6 weeks for an application to be processed. Priority dates are published at lowercolumbia.edu/finaid and in the LCC class schedule.

To receive financial aid, a student **MUST** complete the FAFSA

(Free Application for Federal Student Aid).

1. Review "7 Easy Steps to the FAFSA" at lowercolumbia.edu/finaid/forms. To complete the application, a student will need:
 - Social Security Number.
 - Income statements, tax or estimated income tax, bank statement. Visit FAFSA to learn more.
 - LCC's federal school code: 003782
1. Follow the instructions at fafsa.gov and complete the application.
2. Applicants should check their status at LCC's Financial Aid Portal and upload any requested documents. Do this at edu/finaid. The applicant will use their Social Security Number and birth date (mm/dd/yy) to log in the first time.

How to know if aid is awarded

Students will be notified of any financial aid awards through the Financial Aid Portal (see Step 3). Students should read their award notice carefully.

If a student applies for Financial Aid and registers for classes, it is assumed they are accepting the financial aid award. Students who decide not to attend LCC, must notify Financial Aid to cancel their award by Friday of the first week of classes.

The student should also review information about class changes or academic progress that might impact the award.

Maintaining financial aid eligibility

To continue receiving financial aid, students must meet the Satisfactory Academic Progress standards established by the applicable state and federal financial aid programs. Students who fail to meet these standards may be placed on financial aid warning or lose their financial aid. Students can review Satisfactory Academic Progress standards online at lowercolumbia.edu/finaid.

Reinstating financial aid eligibility

If financial aid eligibility was suspended at LCC, a student may request that their financial aid eligibility be reinstated once they have met the standards for reinstatement. Information about the reinstatement process is available in the Financial Aid Office.

Tuition & Fees

registration@lowercolumbia.edu - 360.442.2370

Tuition at Lower Columbia College is set by the Washington State Legislature and may change according to the State's budget situation. Find the current tuition and fee information online at lowercolumbia.edu/tuition or at the LCC Admissions Center.

Residency Classifications

The Washington State Legislature sets requirements and procedures for determining a student's residency classification.

The Registration Office will make an initial determination of residency status from the information provided on the student's Application for Admission and notify those who have been classified as a nonresident at the time of registration.

To request a review of nonresident status or apply for reclassification, the student must submit a complete Residency Questionnaire with the required documentation to the Registrar no more than 30 calendar days after classes begin. It is up to the student to prove residency, and inadequate or erroneous documentation may result in denial of reclassification for that particular quarter.

Resident Students

Washington Resident students must verify that they have lived in Washington for one year and have established residency in the State of Washington, including U.S. Citizenship. If residency cannot be determined at the time of registration, the student will be required to pay non-resident tuition and fees. Complete residency rules are detailed in RCW 28B.15.012.

Students who are not a permanent resident or U.S. Citizen may be eligible for reduced tuition, if they have resided in Washington State for three years immediately prior to receiving a high school diploma and completed the full senior year at a Washington high school or completed the equivalent of a high school diploma. To determine eligibility, contact the LCC Registrar at 360.442.2372.

Oregon Border County Residents

Residents of Oregon Border Counties (Columbia, Clatsop, Multnomah, Washington) for 90 days may qualify for a reduced rate.

US Citizens & INS Permanent Residents

Individuals who are U.S. Citizens or Permanent Residents, as defined by the INS and who do not otherwise qualify as "resident students", may qualify for a reduced rate.

Other US Citizens and Foreign Students

Those who are not eligible to pay the "Resident Students," "Oregon Border County Residents," or "U.S. Citizens and INS Permanent Residents" rates, pay the non-resident rate.

Veterans

Veterans of the Desert Storm, Iraqi Freedom and Afghanistan conflicts may be eligible for reduced tuition and fees. For details see lowercolumbia.edu/veterans or visit the Veterans' Office in the Student Center.

Special Audit Rate for Senior Citizens

If space is available after the first class meeting, Washington residents 60 or older may audit up to two classes for \$2.50 per class plus applicable fees. Audit rate applies to credit classes only.

Tuition Waivers

Students may qualify for reduced tuition if they are a:

- Classified state employee or Washington Public Higher Education Employee
- Student seeking a high school diploma
- Student enrolled in more than 18 credits of vocational classes
- Washington National Guard member

For details, contact the Registration Office, 360.442.2370.

Miscellaneous Fees

In addition to tuition, LCC students may be assessed fees based on program and course selections. Current charges are listed in the class schedule and online at lowercolumbia.edu/tuition.

Adult Basic Education (ABE)

Students enrolling in Adult Basic Education (ABE) courses pay \$25 per quarter.

Apprenticeship

Students enrolled in apprenticeship programs pay per credit (\$51.00) and per clock hour (\$3.36) fees. They also pay the technology fee, facilities fee, tutoring center fee and fitness center upgrade fee.

Computer Lab

A fee of \$25.10 per class is charged for certain classes identified in the course listings section of the catalog.

Distance Education

A fee is charged for courses that use LCC's Learning Management System, CANVAS or other online systems. The Distance Education fee is \$6.00 per credit (up to 10 credits) for online courses. Distance

Education Hybrid and Enhanced courses require a Distance Education fee of \$3.00 per credit (up to 10 credits).

English as a Second Language (ESL)

Students enrolling in English as a Second Language (ESL) courses pay \$25 per quarter.

Facilities

Quarterly tuition includes a \$1.40 per credit (up to 18 credits) fee for facilities maintenance and college security.

Fitness Center Upgrade

Quarterly tuition includes a \$2.50 per credit (up to 10 credits) fee to fund an upgrade of the campus fitness center.

Fitness Center Use

The Fitness Center User fee is a flat \$20.00 per student per quarter.

GED Courses

Students enrolling in GED preparation courses pay \$25 per quarter.

GED Testing

There are four sections. The cost is \$30 per test, or \$120 for the entire GED series.

High School Completion

Students taking courses to earn a high school diploma are charged a per credit fee based upon residency status (\$51.46 per credit for residents and \$102.91 for non-residents). They also pay the technology fee, facilities fee, tutoring center fee, registration matriculation fee, Fitness Center usage fee and Fitness Center upgrade fee.

ID Card Replacement

All new LCC students are provided with an identification (ID) card. ID cards are required for campus services such as the library, computer labs and testing centers. Student ID cards are distributed by the Student Activities Office in the Student Center. The charge for a replacement Student ID card is \$18.80.

Lab

Nonrefundable lab fees are collected for certain classes. Where applicable, this fee is shown with class listings in the class schedule.

Matriculation

Quarterly tuition includes a matriculation fee of \$.50/credit, up to 10 credits (maximum \$5 per quarter).

Parking Permit Replacement

All LCC students are provided with a parking permit each year at no charge once tuition arrangements have been made. Permits are valid for the entire academic year (fall through summer). Permits can be picked up at the Entry Center in Admissions. The charge for a replacement parking permit is \$20.80.

Resident Excess Credit

Quarterly tuition includes an additional charge (\$92.33 per credit) for 19 or more credits for residents enrolled for over 18 credits.

Running Start

Running Start students will be charged tuition for college credits exceeding 15 in any one quarter (charged at the 1-10 credit tuition rates for 16 credits and above). This does not apply to those enrolled in vocational programs or at Skills Centers. Running Start students are responsible for paying applicable college fees.

Technology

Quarterly tuition includes a \$3.75 per credit (up to 12 credits) technology fee. A photo ID card, which serves as your activities card, library card and computer lab card, is issued as part of this fee. The ID card is NOT issued quarterly; it is valid for the duration of the student's time at LCC.

Transcript

A \$10.00 fee is charged for each official transcript requested. Unofficial transcripts can be printed from the online services page on the LCC website.

Tutoring Center

Quarterly tuition includes a \$.50 per credit fee (up to 10 credits) to fund tutoring services available to all LCC students in most courses.

Vocational Excess Credit

Vocational students enrolled for over 18 credits, who meet certain requirements, pay a reduced per credit fee (\$7.00 for residents); non-residents enrolled for over 18 credits pay a higher fee on 19 credits or more (\$28.00 per credit).

Payment Options

Tuition due dates are posted on the [academic calendar](https://www.lowercolumbia.edu/calendar/academic) at [lowercolumbia.edu/calendar/academic](https://www.lowercolumbia.edu/calendar/academic). Students who have not made arrangements to pay by the deadline will be dropped from their classes.

Payment options include cash, check, debit/credit card, Visa or MasterCard, or enrollment in the Tuition Payment Plan. Special audit rates available for senior citizens.

Students can pay tuition either online at the Cashier Window in the Admissions Center, or online through **online services**. Questions about tuition payments should go Cashiering at 360.442.2210.

LCC offers a tuition payment plan which allows students to pay tuition in smaller monthly installments. Payments are automatically charged to a credit/debit card or withdrawn from a bank account. Enrollment deadlines are posted on the **Tuition Payment Plan** webpage.

If space is available after the first class meeting, Washington residents 60 or older may audit up to two classes for \$2.50 per class plus \$1.40 per credit facilities use fee and applicable lab fees.

Refund of Fees

A refund of fees and tuition will be made to students or to financial aid programs for students who officially withdraw from classes according to the schedule below.

- Withdrawal prior to the sixth day of instruction of the quarter: 100%.
- Withdrawal on or after the sixth day of instruction of the quarter and prior to the 20th calendar day of the quarter: 50%.
- Withdrawal on or after the 20th calendar day of the quarter: 0%.

Check the quarterly class schedule for the exact dates. When the college cancels a class, a full refund is made. Fees other than tuition and incidental fees are not refunded. Special refund policies apply to Continuing Education classes; details are available in the quarterly LCC Class Schedule.

American Opportunity Tax Credit

Lower Columbia College students and families who had tuition and other college-related expenses may be eligible to claim the American Opportunity Tax Credit (formerly called Hope Credit), when they prepare their federal income tax return.

IRS Tax Notice

American Opportunity replaces a similar tax credit provision called the Hope Credit. The new credit of up to \$2,500 for tuition and eligible college expenses is higher than under the Hope provision. In addition, tax filers may now claim expenses incurred during the first four years of their postsecondary education rather than only the first two.

Depending on individual circumstances, the American Opportunity Tax Credit may not be the most advantageous tax option for all families with higher education expenses.

College Information

Lower Columbia College is a public, 2-year institution located in Longview, Washington. Established in 1934, Lower Columbia became an official community college in 1961. In 1967, LCC joined the state-supported community college system. Today, the College includes 26 buildings on nearly 40 acres and enrolls over 6,000 students each year.

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About this Catalog

Every effort is made to ensure that the information in this catalog is accurate at the time of publication (catalog certified as true and correct for content and policy). Acknowledging that policies, personnel, curricular, funding and legal authority can change, however, Lower Columbia College reserves the right to amend, revise or modify any provision printed in this catalog. Because curricula are regularly reviewed and revised, the College also reserves the right to add or withdraw courses without prior notification.

However, students can rely upon the graduation requirements printed in the catalog that is active when they begin their degree programs, or they may take advantage of later changes to their degree programs. LCC will work with students to provide opportunities for degree completion and will honor discontinued degree requirements for five years after the student begins course work for the degree. For the latest updates and corrections to this catalog, please contact the LCC Entry Center, 360.442.2311, or go to lowercolumbia.edu/catalog.

The LCC Catalog is published in conjunction with the LCC Student Handbook, which contains such things as facility descriptions, average class size, student-faculty ratio, hours of operation, and school policies and procedures including student academic rights and responsibilities and the Code of Student Conduct. The

Student Handbook is available at lowercolumbia.edu/publications/student-handbook.

Accreditation Statement

Lower Columbia College is accredited by the Northwest Commission on Colleges and Universities (NWCCU).

The NWCCU is an institutional accrediting body recognized by the Council for Higher Education Accreditation and the Secretary of the U.S. Department of Education.

Accreditation of an institution of higher education by the NWCCU indicates that it meets or exceeds criteria for the assessment of institutional quality evaluated through a peer review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the NWCCU is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding an institution's accredited status by the NWCCU should be directed to the administrative staff of the institution. Individuals may also contact:

Northwest Commission on Colleges and Universities
8060 165th Avenue N.E., Suite 100
Redmond, WA 98052
425.558.4224
www.nwccu.org

Accreditation by the NWCCU refers to the institution as a whole. Therefore, statements like "fully accredited" or "the program is accredited by the Northwest Commission on Colleges and Universities" or "this degree is accredited by the Northwest Commission on Colleges and Universities" are incorrect and should not be used.

In addition to institutional accreditation, specific programs at LCC have obtained specialized accreditation, including:

- The Lower Columbia College Nursing Program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the National League for Nursing Accrediting Commission.
- The Lower Columbia College Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs

on recommendation of the Curriculum Review Board of the American Association of Medical Assistants' Endowment.

Professional/Technical programs of study at Lower Columbia College are approved by the Workforce Training and Education Coordinating Board's State Approving Agency (WTECB/SAA) for enrollment of those eligible to receive benefits under Title 38 and Title 10, USC.

Assurances

Lower Columbia College does not and will not provide any commission, bonus, or other incentive payment based directly or indirectly on success in securing enrollment or financial aid to any persons or entities engaged in any student recruiting or admissions activities or in making decisions regarding the award of student financial assistance.

Lower Columbia College adheres to the Family Educational Rights and Privacy Act (FERPA) with regard to the privacy of student records and the appropriate release of student information, including directory and student records. More information about FERPA is available at www2.ed.gov/policy/gen/guid/fpco/ferpa/students.html and **Academic Policies and Records in this catalog -- see "Annual Notification of Student Privacy (FERPA)."**

Board of Trustees

George Raiter, Chair, appointed December 2013

Retired Cowlitz County Commissioner; former manager at Weyerhaeuser and Reynolds Aluminum.

Thuy Vo, Vice Chair, appointed in December 2004
Owner of VO Printers.

Bob Gregory, appointed November 2015
Retired Longview City Manager

Heidi Heywood, appointed October 2008
Private practice attorney and part-time Superior Court Commission and District Court Pro Tem in Wahkiakum County.

Steve Vincent, appointed in September 2013
Founder of Columbia Analytical Services.

Class Size & Student-Faculty Ratio

Class sizes vary depending on the discipline and available facilities and equipment. Certain disciplines, such as Nursing, must adhere to external standards that limit class size. Other disciplines, such as Machine Trades, Welding, and Automotive Technology, set class size according to the available equipment. Although there are exceptions such as those noted here, classes at LCC most typically fall in the 20-35 student range, with an average of approximately 22 students per class.

LCC's student-faculty ratio was 19.73 in fall 2015 (19.73 full-time equivalent students on campus for every full-time equivalent faculty).

Core Themes

Core Theme I: Workforce and Economic Development

Objective 1: Provide quality professional/technical education for employment, skills enhancement, and career development.

1. Student performance
2. Demonstration of program competencies
3. Licensure/certification rates
4. Placement rate in the workforce

Objective 2: Partner with business, community groups, and other educational entities to provide workforce development and customized programs and services.

1. Employer satisfaction
2. Relevance of programs
3. Client assessment of programs and services

Core Theme II: Transfer and Academic Preparation

Objective 1: Ensure that learners who are under prepared for college level studies have access to developmental coursework and bridge opportunities to college level work.

1. Basic skills achievement
2. Academic performance of developmental education students
3. Proportion of students placing directly into college level math

Objective 2: Offer courses and support for students to meet the requirements for transfer from Lower Columbia College.

1. Student performance

2. Transfer Eligibility
3. Demonstration of General Education Outcomes

Objective 3: Provide the support for transfer students to successfully transition to upper division college and university programs.

1. Academic transfer rate
2. Relevance of programs (academic success after transfer)

Core Theme III: Student Access, Support and Completion

Objective 1: Offer a full array of educational programs and support services to meet the diverse needs of Cowlitz and Wahkiakum counties.

1. Participation rates of persons age 17 and above who live within the College's service district
2. Participation rate of diverse student populations
3. Enrollment

Objective 2: Provide students with the support needed to pursue and achieve their educational goals.

1. Student persistence
2. Student progress/completion
3. Student satisfaction with support services
4. Success of academic support programs
5. Faculty-student engagement

Core Theme IV: Institutional Excellence

Objective 1: Demonstrate our commitment to institutional integrity by investing in our campus, students and employees.

1. Professional development of faculty and staff
2. Faculty/staff satisfaction and morale
3. Condition of infrastructure

Objective 2: Uphold our reputation for high quality and contribute to the value of the community by promoting excellence in our programs, services and activities.

1. External perceptions/satisfaction with LCC
2. Student/graduate satisfaction with instruction
3. Cultural enrichment of students and community

Equal Opportunity & Affirmative Action Statement

Lower Columbia College offers over 70 associate degree and certificate options in a variety of fields, providing a rich complement of technical/professional, basic skills, and continuing education programs.

Degree or certificate seeking students must apply for program admission and register in the degree or certificate program. The College will take steps to ensure that lack of English language skills will not be a barrier to admission or participation in vocational education programs.

The College provides equal opportunity in education and employment and does not discriminate on the basis of race, color, national origin, age, perceived or actual physical or mental disability, pregnancy, genetic information, sex, sexual orientation, gender identity, marital status, creed, religion, honorably discharged veteran or military status, or use of a trained guide dog or service animal as required by Title VI of the Civil Rights Act of 1964, Title VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Sections 504 and 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act and ADA Amendment Act, the Age Discrimination Act of 1975, the Violence Against Women Reauthorization Act and Washington State's Law Against Discrimination, Chapter 49.60 RCW and their implementing regulations.

Faculty & Administration at LCC

Administration

President

Christopher C. Bailey (2011)

B.A., Western Washington University; J.D., University of Washington School of Law

Vice Presidents

Brendan Glaser (1990), Vice President of Instruction
B.S., University of Northern Colorado; M.B.A., Pacific Lutheran University

Sue Orchard (2016), Vice President of Student Services

B.A. and M.A., Eastern Washington University; Psy.D
Pacific University School of Professional Psychology

Kendra Sprague (2011), Vice President of Foundation, Human Resources & Legal Affairs
B.A., Washington State University; J.D., Willamette University College of Law

Nolan Wheeler (1994), Vice President of Administration
A.A., Lower Columbia College; B.A., Western Washington University; M.B.A., University of Phoenix

Wendy Hall (2003), Associate Vice President of Effectiveness & College Relations
B.A., Whitman College; M.P.A., University of Washington

Deans

Karen Joiner (1993), Executive Dean of Instructional Programs & Director of Nursing
A.A., Lower Columbia College; B.S.N., University of the State of New York; M.S., University of Portland

Kyle Hammon (2008), Dean of Instructional Programs
B.S., M.S., University of Oregon

Tamra Bell (2007), Interim Dean of Instructional Programs
A.A., Lower Columbia College; B.S., M.S., Warner Pacific College

Melinda Harbaugh (2013), Interim Dean of Instructional Programs & Library Director
B.A.; Louisiana State University, Masters in Instructional Technology; Georgia Southern University

Department Directors

Roxana Ahmadifard (2004), Director of Student Programs
A.A., Lower Columbia College; B.A., University of Washington, M.Ed., Concordia University

Marie Boisvert (2016), Director of International Student Programs
B.A., State University of New York; M.A., California State University

Sue Boursaw (1990), Director of Head Start/ECEAP/EHS
A.A., Lower Columbia College; B.A., Master of Education, Washington State University

Jodi Dahlke (2010), Director of TRiO Programs
A.A., ITT Technical Institute; B.A., Washington State University; Master of Fine Arts, Northwest Institute of Literary Arts

Marisa Geier (2004), Director of Financial Aid
A.A., Lower Columbia College; B.S., Western Baptist College; M.P.A., Walden University

Richard Hamilton (2001), Director of Campus Services, Facilities and Capital Projects
A.S., City University; A.A., Lower Columbia College; B.A., Washington State University

Chad Meadors (2007), Director of Advising & Testing and Head Women's Basketball Coach
A.A., Clackamas Community College; B.S., Western Oregon University, Masters in Teaching, Western Oregon University

Mary Kate Marthaller (2013), Director of Disability Support Services
B.A., Gonzaga University

Brandon Ray (2011), Director of Information Systems
B.A., University of Portland; M.S., Warner Pacific College

Kirc Roland (2001), Athletic Director
B.A., San Diego State University

Nichole Seroshek (2010), Director of Registration
A.A., Lower Columbia College; B.A. Washington State University

Janel Skreen (2013), Director of Environmental Health & Safety
B.S., M.S., Washington State University

Theresa Stalick (2011), Director of Transitional Studies
B.A., University of Oregon; M.A., University of Idaho

Dani Trimble (2010), Interim Workforce Programs Director
B.A., The Evergreen State College; Masters of Education, Central Washington University

Full Time Faculty

Timothy Allwine (2006), Business Administration & Technology
B.S., Miami University; M.B.A., University of Montana

Earnest "Trey" Batey, Ph.D. (2015), Anthropology
B.A., Louisiana State; M.A., Wichita State University; Ph.D., University of Arkansas

Hiedi Bauer (2006), English
A.A. Lower Columbia College; B.A., The Evergreen State College; M.A., Portland State University

William "Brad" Benjamin (2008), Mathematics
B.S., Miami University; M.S., Portland State University

David L. Benson (1984), Political Science, History
B.A., Willamette University; M.A., Columbia University

Merry Bond (2010), Nursing
A.A., Lower Columbia; B.S., Washington State University, Masters in Nurse Educator; Capella University

Alex Brehm (2016), Speech
B.A., Saint John's University; M.A., Portland State University

Randal D. Byrum (1998), Welding
A.T.A., Lower Columbia College

Gina Challed (2011), Choral Director

B.A., Western New Mexico University; M.M., New Mexico State University

Becky Connolly (1999), Language & Literature
B.A.; Eastern Washington University, Master of Science; Capella University

Dana Cummings (2008), Business
B.A.; Washington State University, Masters in Accounting; Strayer University

Jacquelyn Dailey (2014), Nursing
A.A., Spokane Community College; B.S., Central Washington University; B.S.N., M.S.N., Western Governors University

Robert Davis, Ph.D. (2012), Instrumental Music
B.M., M.M., Brigham Young University; D.M.A., University of Southern California

Donald D. Derkacht (2002), Computer Science
B.S. and M.S.E.E., Washington State University

Nicole DiGerlando (2012), Reading/Composition
B.A., M.A., Lehigh University

James Dillinger (2008), Diesel/Heavy Equipment
A.A.S., Lower Columbia College

Dawn M. Draus (2003), Mathematics
B.S. and M.S., Northern Arizona University

Ken Ecklund (1997), Diesel/Heavy Equipment, Automotive Technology
A.A.S., Blue Mountain Community College; B.S., Oregon Institute of Technology

Alex Emerson (1994), English, Spanish
B.A., B.A., M.A., Central Washington University

Elizabeth Engel (2010), Medical Assisting
A.A.S., North Seattle Community College; M.Div., Luther Seminary

James Franz (2008), Economics
B.A., State University of New York Plattsburgh; M.A., California State University

Katrina Fuller (2008), Biological Sciences
B.S., Stephen F. Austin State University; M.S., Louisiana State University Medical Center

Mark Gaither (2013), Business Technology
B.A.; Portland State University, Masters in Curriculum and Instruction, University of Phoenix

Jeanne L. Hamer (1999), Nursing
A.A.S., Lower Columbia College; BSN, Washington State University; M.S.N., Washington State University

Janell Haynes, Ph.M. (2015), Language & Literature
B.S.; Missouri State University, M.A., Missouri State University; Ph.M., Syracuse University

Mary Hebert (2014), Mathematics
B.A. Northwestern State University of Louisiana, Masters in Mathmatics, Texas Tech University

Armando L. Herbelin, Ph.D. (2002), Chemistry
B.S., Oregon State University; Ph.D., University of Washington

Klint D. Hull (2004), English
B.A. and M.A., Eastern Washington University

Lindsay Keevy (2016), Librarian
B.A., California State University; Master of Library & Information Science, San Jose State University

Corry Kile (2011), Automotive Technology
Automotive Technology Diploma; Phoenix Institute of Technology

Louis LaPierre, Ph.D. (2004), Biology and Environmental Science
B.A. and Ph.D., University of California

Mary M. Leach (2005), Pre-College Education, Humanities
B.A., Washington State University; M.A., California State University

Amber Lemiere (2013), Language & Literature
A.A.; Lower Columbia College, B.A.; Washington State University, Masters in English-Rheotic and the Teaching of Writing, Northern Arizona University

Nadine Lemmons (2006), Business Technology & Administration
A.A.S., Lower Columbia College; B.A., George Fox University; M.B.A., Marylhurst University.

Peteris Livins, Ph.D. (2008), Physics, Mathematics
B.S., State University of New York Stonybrook; Ph.D., University of Virginia

David N. McCarthy, Ph.D. (1974), English
B.A., M.A., Ph.D., University of California—Santa Barbara

Brian Mack (2015), Fire Science

Jason Malozzi(2015), Mathematics
A.A., Harrisburg Area Community College; B.A., Penn State; M.S., Lehigh University

Jacqueline Marr(2010), Nursing
Microbiology Food & Drug Tech, Durham College; R.N. Mack School of Nursing; B.A., Chamberlain College of Nursing

Rhonda L. Meyers (1988), Biological Sciences
A.A., Lower Columbia College; B.S., Oregon State University; M.I.T., St. Martin's University; M.L.S., University of Maryland

Lucas Myers (2011), Biological Sciences
B.A., Linfield College; Masters in Public Health, A.T. Still University, Masters in Anatomy/Physiology; New York Chiropractic College

Stefanie Neill(2008), Speech
B.S., North Dakota State University, Masters in Speech Comm, Colorado State University

Tamara R. Norton (1999), Nursing
A.A., Lower Columbia College; B.S.N. and M.S.N.,
Washington State University

Connie Ramos (2005), Nursing
A.A.S., Portland Community College; B.S.N., Regis
University (Denver)

Cary W. Rhode (2005), Pre-College Education,
Mathematics
B.S., University of Illinois, M.A., State University of New
York Brockport

Elizabeth Richard (2015), Drama
B.A., City College; M.AA., Eastern Michigan University

Benjamino “Stefan” Rijnhart (2015), Computer
Science
A.A., Lower Columbia College

Gary Roeske(2013), Automotive
A.A., Mount Hood Community College

David L. Rosi (2003), Computer Science
A.A., Lower Columbia College; B.A., Central
Washington State University; B.A., Western Washington
State University; M.S., Nova Southeastern University

Elena Ross (2008), PE
B.A., Pacific Lutheran University, Masters in Health
Studies, University of Alabama

Morgan Salisbury (2016), Earth Science
B.S., University of Idaho; M.S., Central Washington
University; Ph.D., Oregon State University

Shari Samuels, Ph.D., (2015), Mathematics
B.S.E., Chadron State College; M.A.E., Chadron State
College; Ph.D., Montana State University

Courtney Shah, Ph.D. (2007), History
B.A., Duke University; M.A., Brandeis University; Ph.D.,
University of Houston

Nathan Shepherd (2015), Machine Trades
A.A., Lower Columbia College

Terri Skeie (1996), Mathematics
A.A., Lower Columbia College; B.A., The Evergreen
State College

Kathy A. Stafford (2001), Nursing
B.S.N., M.S.N., Washington State University

Jim C. Stanley (1999), Accounting
B.A., California State University; M.S., St. Cloud
University

Michael J. Strayer (1980), Psychology, Sociology
B.A., The Evergreen State College; M.A., Whitworth
College

Richard J. Swee (1993), Mathematics
B.S., M.A.T., University of Portland

Kam V. Todd (1994), Machine Trades, Manufacturing

Annette M. Ward (2004), Nursing
B.S.N, Oregon Health Sciences University; M.S.N.,
University of Phoenix

Nikki Warthen (2008), Nursing
B.S., University of San Fransisco; Nursing Education
M.S.N., Grand Canyon University

Michal-Ann Watts (2008), Transitional Studies
A.A., Lower Columbia College, B.S., Saint Martin's
University, M.Ed./Curriculum and Instruction

Marguerite “Nonnie” Weaver (1995), Sociology,
Psychology
B.A., Hunter College; M.S.W., Walla Walla College

Ann R. Williamson (1998), Early Childhood Education
B.S., Linfield College; M.Ed., City University

Adam J. Wolfer, Ph.D. (2000), Chemistry/Chemical
Engineering
B.S. and M.S, Oregon State University; M.S., Colorado
State University; Ph.D., Oregon State University

Josie Zbaeren (2013), Early Childhood Education
A.A.; Lower Columbia College, B.S.; Kaplan University,
Masters in Early Childhood Studies; Walden University

Faculty & Administrators with Emeritus Status

Dr. Vernon Pickett, President Emeritus, 1997

Dr. Donald Fuller, Dean Emeritus, 1998

Mr. Hilmar Kuebel, Dean Emeritus, 1999

Mr. Bruce Cardwell, Trustee Emeritus, 2000

Mr. Gary Healea, Trustee Emeritus, 2005

Dr. Kurtz Carpenter, Faculty Emeritus, 2005

Mr. Lionel Livermore, Faculty Emeritus, 2005

Ms. Carol McNair, Faculty Emeritus, 2006

Ms. Ann Mottet, Trustee Emeritus, 2006

Dr. Clint Benjamin, Faculty Emeritus, 2008

Mr. Lyle Lovingfoss, Trustee Emeritus, 2009

Ms. Kathy Demarest, Faculty Emeritus, 2010

Ms. Mary Harding, Vice President Emeritus, 2010

Ms. Mary Stone, Faculty Emeritus, 2011

Ms. Helen Kuebel, Dean Emeritus, 2011

Dr. James McLaughlin, President Emeritus, 2011

Mr. Mike Dugaw, Faculty Emeritus, 2011

Mr. George Dennis, Faculty Emeritus, 2011

Mr. Richard Kelley, Faculty Emeritus, 2011

Dr. Jerry Zimmerman, Faculty Emeritus, 2013

Ms. Kathy Meier, Faculty Emeritus, 2014

Global Skills

Communication: Express ideas and information in writing and speaking in a manner that is clear and appropriate to the audience, and read and listen effectively.

1. Students will communicate in complete sentences, demonstrating use of grammar, mechanics, and word choice appropriate to context.
2. Students will develop and express their ideas clearly and reasonably for a unified purpose.
3. Students will demonstrate comprehension of a wide variety of materials.
4. Students will use credible evidence to support arguments and conclusions.
5. Students will document source information.
6. Students will use a style of delivery that is effective in communicating their message.

Critical Thinking: Apply objective, valid methods of inquiry and problem-solving to draw rational, ethical, and coherent conclusions.

1. Students will identify and define primary problems or issues.
2. Students will present relevant, accurate, and objective information and will draw valid inferences from that information.
3. Students will use techniques or processes appropriate to the subject to analyze and make judgments.
4. Students will propose and evaluate solutions based on the criteria of logic, evidence, ethical principles, and coherence.

Interpersonal Relations: Interact effectively with individuals and/or within groups.

1. Students will participate actively, demonstrating commitment to shared tasks.
2. Students will cooperate with others.
3. Students will use verbal and non-verbal skills appropriate for the context to enhance collaboration.

Numeracy: Achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills in practical and abstract contexts.

1. Students will analyze, interpret and draw valid inferences from graphical and numerical data.
2. Students will use quantitative skills to arrive at a solution/conclusion.
3. Students will use quantitative skills to assess the validity of a proposed solution/conclusion
4. Students will communicate numerical and mathematical processes using appropriate symbols, language and terminology.

Mission, Vision and Values

Mission

The mission of Lower Columbia College is to ensure each learner's personal and professional success, and influence lives in ways that are local, global, traditional, and innovative.

Vision

Our vision is to be a powerful force for improving the quality of life in our community.

Values

Our campus community expects an environment of integrity, respect, collaboration, cooperation, inclusion, and innovation that fosters personal growth, academic excellence, and accountability.

Non-Discrimination & Anti-Harassment Policy

Lower Columbia College provides equal opportunity in education and employment and does not discriminate on the basis of race, color, national origin, age, perceived or actual physical or mental disability, pregnancy, genetic information, sex, sexual orientation, gender identity, marital status, creed, religion, honorably discharged veteran or military status, or use of a trained guide dog or service animal, as required by Title VI of the Civil Rights Act of 1964, Title VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Sections 504 and 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act and ADA Amendment Act, the Age Discrimination Act of

1975, the Violence Against Women Reauthorization Act and Washington State's Law Against Discrimination, Chapter 49.60 RCW and their implementing regulations.

Harassment is defined as a form of discrimination consisting of physical or verbal conduct that denigrates or shows hostility toward an individual because of their membership in a protected class or their perceived membership in a protected class. Harassment occurs when the conduct is sufficiently severe and/or pervasive and so objectively offensive that it has the effect of altering the terms or conditions of employment or substantially limiting the ability of a student to participate in or benefit from the College's educational and/or social programs.

Sexual Harassment is defined as a form of discrimination consisting of unwelcome, gender-based verbal, written, electronic and/or physical conduct. Sexual harassment does not have to be of a sexual nature, however, and can include offensive remarks about a person's gender. There are two types of sexual harassment.

- Hostile Environment Sexual Harassment occurs when the conduct is sufficiently severe and/or pervasive and so objectively offensive that it has the effect of altering the terms or conditions of employment or substantially limiting the ability of a student to participate in or benefit from the College's educational and/or social programs.
- Quid Pro Quo Sexual Harassment occurs when an individual in a position of real or perceived authority, conditions the receipt of a benefit upon granting of sexual favors.

Sexual violence is a form of sexual discrimination and harassment. Nonconsensual sexual intercourse, nonconsensual sexual contact, domestic violence, dating violence, and stalking are all types of sexual violence.

For inquiries regarding this policy please contact:

Vice President of Foundation, Human Resources & Legal Affairs
Title IX/EEO Coordinator

Office: Administration Building, Rm. 115

Lower Columbia College
 1600 Maple Street
 Longview, WA 98632

360.442.2121
title9@lowercolumbia.edu
 TTY/Video Relay Service: 7-1-1 or 800.833.6388

Vice President of Student Services,
Title IX/EEO Deputy Coordinator

Office: Admissions Center, Rm. 159

Lower Columbia College
 1600 Maple Street

Longview, WA 98632

360.442.2301
title9@lowercolumbia.edu
 TTY/Video Relay Service: 7-1-1 or 800.833.6388

Student Handbook

Student Handbook

lowercolumbia.edu/publications/student-handbook

The Student Handbook is published in conjunction with the LCC Catalog. The Handbook includes information on:

- **Facilities Directory**
- **Departments A to Z**
- **Important Things to Know**
- **Academic Dishonesty**
- **Academic Standards**
- **Adding & Withdrawing from Classes**
- **Code of Student Conduct**
- **Other Student Related Policies**
- **Student Academic Grievance Resolution Procedures**
- **Student Academic Rights & Responsibilities**

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

GPA Calculation

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) or I (Incomplete) 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.

Auditing Courses

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 at the Registration Office, 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 is 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 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.

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 except when earned as non-traditional credits or when pass/fail courses are required by a specific program.
- 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 or earned through non-traditional credits.
- "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. It is highly recommended that students

consult with the college or university they intend to transfer for information on transferring credit earned through non-traditional methods.

Repeating Courses

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 purpose of the Academic Standards Committee is to make recommendations for changes in academic policy, and to serve as the body that hears and acts upon student appeals and grievances of an academic nature. Membership consists of an academic employee elected from each instructional department, the Vice President of Student Services, and a student body representative. The Registrar serves as a non-voting exofficio. The Academic Standards Committee shall review student appeals of: (1) Sanctions imposed on students for alleged arbitrary and capricious application of academic standards; (2) Application of academic policies or procedures by instructors. The Committee shall also grant or deny requests to:

1. Change grades that have been recorded.
2. Reinstate students from academic probation.
3. Waive graduation requirements

Petition forms are available in the Registration Office, and the Office of the Vice President of Student Services, and online at lowercolumbia.edu/students/forms. Completed forms should be directed to the Secretary of the Academic Standards Committee, who is the Executive Assistant to the Vice President of Student Services.

See also: **Academic Standards Committee Operational Guidelines.**

Student Academic Grievance

LCC's Academic Grievance policy (Administrative Policy 435) protects student freedom of expression in the classroom and protects each student from improper, arbitrary, or capricious academic evaluation as evidenced by the student's final course grade.

A student with an academic grievance shall follow the procedures and timelines listed in the Student Academic Grievance Procedure. More information and a copy of the Student Academic Grievance Petition form is available in the Office of the Vice President of Student Services (360.442.2300) or online at lowercolumbia.edu/students/forms. The full text of the Student Academic Grievance Procedure is also available in the **Student Handbook**.

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 of Student Services 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, the Office of the Vice President of Student Services, and online at lowercolumbia.edu/students/forms. Completed forms should be directed to the Executive Assistant to the Vice President of Student Services. If readmitted, the student must enroll under whatever conditions are determined to help him or her to succeed.

Non-Traditional Credits

Course Equivalency Assessment

A student may request to have a course equivalency assessment (CEA), performed by faculty, and based on prior education or work experience. Courses and credits earned through CEA are not included in the student's grade point average. CEA 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 CEA 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 Transfer Agreement or Associate in Sciences-Transfer degree but do not satisfy lab requirements. Students must submit an official copy of CLEP scores to the Registration office. Upon evaluation of those scores, the student will be notified of acceptable credits. Credit will be granted for Excelsior College Examinations on a case-by-case basis. Provisional credit will be given prior to a student's completion of 12 LCC credits. Credits will be granted and posted to the student's transcript following completion of required LCC credits. To read the CLEP Acceptance Policy and Exam Score equivalencies, search for '**CLEP Policy**' at lowercolumbia.edu.

Credits Earned at institutions outside the United States

Lower Columbia College recognizes academic credits earned at institutions outside of the United States that are equivalent in academic level and nature to work offered at LCC. Students who have studied abroad and intend to use these credits towards fulfilling requirements of a program at LCC should contact the Registration office for information on transferring credit earned outside of the United States. The Registrar makes the final determination on credits to be granted.

International Baccalaureate Credit

The International Baccalaureate (IB) program is a rigorous, pre-college course of study for high school students, designed to prepare students for liberal arts education at the college level. The term "international" reflects the availability of the program in several countries. The IB program is similar to the College Board Advanced Placement program. IB scores are based on rigorous coursework and a test score. LCC accepts IB credit. Students must submit an official copy of IB scores to the Registration Office. Following evaluation of IB scores, the student will be notified of acceptable credits. For transfer of credit information, a student should consult the Registrar. Final decision on credit granted for IB scores is determined by the Registrar.

Military Service Experience

Credits for military personnel's military school and experiences are granted according to the publications

of the American Council on Education. Students should submit official copies of their Joint Service Transcript (JST) to the Registration Office along with a Transcript Evaluation Request form. Note: if you plan to use VA education benefits, you must submit official transcripts for a credit/transcript review.

Joint Services Transcripts are ordered online at <https://jst.doded.mil>. The credential evaluator will review the record and translate military training experience applicable to a student's degree or certificate into Lower Columbia College course numbers and credit values. Final determination on credit granted for military service experience is at the discretion of the Registrar. Courses transferred in as electives will be considered restricted. A student is allowed up to 15 credits of restricted electives to be counted towards a transfer degree at LCC. NOTE: Some four-year institutions will not accept military credits. Students with military experience may also explore the Non-Traditional Credits assessment process.

Students who change their program of study must request to have their transcripts re-evaluated to determine any applicable transfer credit for their new program of study.

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/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

Official Transcripts

An official transcript is a copy of the student's permanent record, signed by the Director of Enrollment Services/Registrar with the school seal placed over this signature. An unofficial transcript is an unsigned and non-seal-bearing copy of that record. A student may request a transcript in-person, in writing, or online by searching for '**Transcripts**' at lowercolumbia.edu. A transcript will only be released to the student or to persons authorized in writing by the student. LCC charges a small processing fee for each official transcript requested.

Unofficial Transcripts

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

Annual Notification of Student Privacy (FERPA)

Section 99.7 of the Family Educational Rights and Privacy Act (FERPA) requires students be informed of their rights under the FERPA regulations. Student rights include the following:

- The right to inspect and review their education records.
- The right to request the amendment of their education records to ensure that they are not inaccurate, misleading, or otherwise in violation of their privacy or other rights.
- The right to consent to disclosures of personally identifiable information contained in their education records, except to the extent that the Act and

regulations in this part authorize disclosure without consent such as College officials with legitimate educational interest.

- The right to file with the U.S. Department of Education a complaint under Sections 99.63 and 99.64 concerning alleged failures by the College to comply with the regulations of the Act. The office that administers FERPA is:

Family Policy Compliance Office,
U.S. Department of Education,
400 Maryland Ave., SW
Washington, D.C. 20202

The following has been identified as Directory Information and may be released without the student's written consent:

Directory Information, News and Photos— LCC may release the following for publication without the student's written permission:

- name
- field of study
- dates of attendance, full or part-time status, and alumni information
- degrees and awards, including academic awards
- the name and major of scholarship recipients
- the names of graduates of the college
- the names and qualifications of students receiving various honors
- sport, high school, height and weight of student athletes
- 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

Note: Lower Columbia College reserves the right to exercise its discretion to limit disclosure of directory information "to specific parties, for specific purposes, or both."

Under FERPA a student may request that directory information cannot be released. In doing so directory information required for instances including but not limited to classroom administration and Internal Revenue Service remain exempt. Lower Columbia College does not assume any responsibility for contacting a student for ongoing permission to release Directory Information and does not assume liability for honoring a student's request to restrict disclosure of directory information. Please contact the Registration Office for more information on restricting directory information. To restrict the release of directory information, you must complete a "Student Request for Non-Disclosure of Directory Information" form, which is available in the Registration office.

A "No Release" applies to all elements of directory information on your record. Lower Columbia College does not apply a "No Release" differentially to the various directory information data elements.

As a part of FERPA policy, Lower Columbia College defines College official as: members of the College in an administrative, supervisory, academic, research, or support position or a person employed by (or under contract to) the College to perform a special task, such as an agent, attorney or auditor.

A College official has a legitimate interest if the official has the need to know within the limitations typically required to fulfill his or her official responsibilities or by a contract agreement related to a student's educational experience.

FERPA permits the disclosure of personally identifiable information from students' education records, without consent of the student, if the disclosure meets certain conditions found in 99.31 of the FERPA regulations. Except for disclosures to College officials, disclosures of directory information, and disclosures to the student, 99.32 of FERPA regulations require Lower Columbia College to record the disclosure. Eligible students have a right to inspect and review the record of disclosures.

A postsecondary institution **may** disclose personally identifiable information from the education records without obtaining prior written consent of the student:

- The disclosure is to other school officials, including teachers, within the institution whom the institution has determined to have a legitimate educational interest.
- The disclosure is to officials of another institution of postsecondary education where the student seeks or intends to enroll or where the student is already enrolled so long as the disclosure is for purposes related to the student's enrollment transfer.
- The disclosure is to authorized representatives of federal, state, or local educational authorities.
- Disclosure is to the student.
- In connection with the student's request for/receipt of financial aid.
- If required by a state law requiring disclosure that was adopted before November 19, 1974.
- To organizations conducting certain studies for or on behalf of the College.
- To accrediting organizations to carry out their functions.
- To comply with a judicial order or lawfully issued subpoena.
Note: The College will make a reasonable effort to notify the student or a designate of the order or subpoena in advance of compliance.
- To appropriate parties in a health or safety emergency.

- To a victim of an alleged perpetrator of a crime of violence or a non-forcible sex offense, subject to the requirements of 99.39. The disclosure may only include the final results of the disciplinary proceeding with respect to that alleged crime or offense, regardless of the finding. (99.31 9(a)(13))
- To the general public, the final results of a disciplinary proceeding, subject to the requirements of 99.39, if the school determines the student is an alleged perpetrator of a crime of violence or non-forcible sex offense and the student has committed a violation of the school's rules or policies with respect to the allegation made against him or her. (99.31 (a) (14))
- To parents of a student regarding the student's violation of any federal, state or local law, or any rule or policy of the school, governing the use or possession of alcohol or a controlled substance if the school determines the student committed a disciplinary violation and the student is under the age of 21. (99.31 (a)(15))
- Information the school has designated as "directory information" under 99.37. (99.31 (a)(11))

The Solomon Amendment

The Solomon Amendment (1998) is a federal law authorizing institutions that receive federal funding to allow the Department of Defense:

- Entry to campus
- Access to students on campus
- Access to lists containing recruiting information on students

The Solomon Amendment identifies certain information that military recruiters may request about you if you are a student aged 17 years or older, and are registered for class(es). This information is known as Student Recruiting Information.

This information includes only:

- Name
- Address
- Telephone number
- Age
- Class level
- Academic major
- Place of birth
- Degrees received
- Most recent educational institution attended
- Email address

If you restrict the release of directory information under FERPA, then the College may not release such information to the military either (FERPA supersedes the Solomon Amendment.) There are additional guidelines for the release of data. The Office of the Registrar

authorizes all data released to the requesting units. Please refer any requests to the Registrar.

Honors & Recognition

All USA Academic Team Award

Up to two Lower Columbia College students are honored each year through the All-USA and All-State Academic Team recognition programs. State team members are nominated by their community college presidents. Each All-Washington Academic Team member receives a scholarship funded by program sponsors. The state's public baccalaureate institutions and several private colleges also offer scholarships to community college transfers who are award winners.

Honors Lists

The Honors List is compiled by the Registrar's Office at the end of each quarter to recognize students who have achieved commendable grade point averages.

Quarterly President's and Dean's Lists are submitted to The Longview Daily News for publication and are posted on the [LCC website](#). Graduates who have achieved the President's List or Dean's List every quarter are recognized with a gold cord at commencement.

- President's List: to be named to the president's list, students must attend school full-time and maintain a grade point average between 3.8 and 4.0.
- Dean's List: to be named to the dean's list, students must attend school full-time and maintain a grade point average between 3.25 and 3.79.

Outstanding Student Awards

Each spring, LCC faculty and staff select outstanding students from their respective fields of study and activities for recognition. The students are honored at a reception hosted by the Associated Students of Lower Columbia College and the Vice President of Instruction.

Degrees & Certificates

General Requirements for Earning Associate Degrees

- Maintain a minimum cumulative grade point average of 2.00 on the credits that may be used toward the degree.
- Complete at least two quarters—including the last quarter—at Lower Columbia College.
- Earn at least 24 credits at Lower Columbia College, exclusive of credits by examination.
- Earn no more than 15 pass/fail credits. Pass/fail courses may not be used to meet communication, quantitative skills, core program, or distribution requirements, except when a pass/fail class is required by a specific program.
- Diversity requirement—5 credits. See quarterly schedule for diversity classes. Courses that meet this requirement may also be used toward other graduation requirements.

Transfer Degrees

Lower Columbia College offers a number of transfer degrees options that allow students to complete the first two years of a bachelor's degree. The Major Related Program (MRP) degrees build on these to provide specific preparation to enter bachelor programs. Requirements for LCC graduation and acceptance at a four-year college vary by degree type, field, and college. In addition, the following requirement applies to transfer associate degrees:

- Minimum of 90 transferable credits in courses numbered 100 and above. No more than 6 credits in PHED activity courses; no more than 15 credits in Cooperative Work Experience and/or Independent Study, and no more than 5 credits in performance/skills courses are allowed.

**No more than 3 PHED activity credits are allowed within the AA-DTA

Associate in Arts and Sciences (AA)

The program-specific Associate in Arts and 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, and the student must file an intent to earn this degree when applying for graduation from LCC.

To earn an AA, you need:

- General Requirements for Earning an Associate Degree (above)
- Communications requirement—15 credits
ENGL& 101 English Composition I, ENGL& 102 Composition II or ENGL& 235 Technical Writing, and SPCH 110 Intro to Public Speaking.
- Other: 70 credits minimum - approved by the program advisor and the appropriate department chair.

Associate in Arts - Direct Transfer Agreement (AA-DTA)

The Direct Transfer Agreement associate degree, sometimes called the Associate in Arts or Associate in Arts and Sciences degree, is the community college degree designed to transfer to most bachelor of arts degree programs at Washington's four-year institutions.

Degrees structured under the DTA umbrella provide:

- Priority admissions consideration at public universities for most humanities and social science majors ahead of non-degreed transfers.
- Completion of lower division general education requirements.
- Credit for all courses completed within the AA-DTA up to and in some cases beyond 90 credits.
- Opportunity to explore several fields of study through the category of up to 30 credits of elective courses.
- Opportunity to complete prerequisites for a future major.

To earn an AA-DTA, you need:

- General Requirements for Earning an Associate Degree (above)
- Communications requirement—15 credits
ENGL& 101, ENGL& 102, and SPCH 110 or SPCH 114.
- Quantitative/symbolic reasoning skills requirement — 5 credits— Intermediate Algebra Proficiency required. Choose one of the following: MATH& 107 or higher with the exception of MATH& 131.
- Humanities requirement—15 credits from at least three areas on the Distribution List for Transfer Degrees. No more than 10 credits from any one discipline; no more than 5 credits in performance skills courses; no more than 5 credits in foreign language at the 100 level. Courses may be credited toward no more than one distribution.
- Social Sciences requirement—15 credits from at least three areas on the Distribution List for Transfer Degrees. No more than 10 credits from any one discipline. Courses may be credited toward no more than one distribution.
- Natural Sciences requirement—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 requirement—5 credits. Courses that meet this requirement may also be used toward other graduation requirements and will be designated in course schedules.
- Electives—Of the remaining credits taken to earn 90 credits for the degree, no more than 15 credits may be taken from the Restricted Course List.

Major Related Program (MRP)

Major Related Program degrees build on the Associate in Arts Direct Transfer Agreement degree for students in the arts, humanities and social sciences, and the Associate in Sciences Transfer degree for students in engineering and science-based fields. Two-year and four-year colleges work together to create these programs so that LCC graduates can transfer smoothly into the bachelor degree program of their choice.

Specific requirements for the different MRP's are located in the Programs of Study section of the catalog.

Associate in Applied Science-Transfer (AAS-T)

The Associate in Applied Science-Transfer degree is built upon the technical courses required for job preparation but also includes a college-level general education component common in structure for all such degrees. Public and private universities are not required to accept AAS-T degrees. Students must check with their advisor at Lower Columbia College and a representative from the college they plan to attend to determine the specific transfer and admission requirements in their field of study.

Associate in Science-Transfer (AS-T)

The Associate in Science—Transfer degree is designed for community and technical college students seeking to major in engineering and science. Degrees structured under the AS-T umbrella provide:

- Priority admissions consideration at public universities for most science and engineering majors ahead of transfer students without a degree.
- Completion of similar lower division general education requirements as first-year and second-year university students in engineering or science-based fields.
- Credit for all courses completed within the AS-T up to 90 credits. In some cases more credits may be accepted.
- Opportunity to complete math and science prerequisites for the chosen major.

There are two AS-T degree options:

- Option One: biological sciences, environmental or resource sciences, chemistry, geology, and earth sciences.
- Option Two: computer science, engineering, physics, and atmospheric sciences.

For either of these options, you must work closely with your advisor and enroll in courses that meet your transfer institution's requirements.

AS-T degree are issued only to students who have earned a cumulative grade point average of at least 2.0, as calculated by Lower Columbia College. Based on 90 quarter hours of transferable credit distributed per the requirements noted below.

To earn an AS-T, you need:

- General Requirements for Earning an Associate Degree (above)
- Communications requirement—ENGL& 101 (5 credits).
- Mathematics requirement—MATH& 151 and 152 (10 credits).
- Humanities/Social Sciences requirement—15 credits.
- Pre-major program courses specific to the appropriate track. It is recommended that all sequence courses be completed at one institution.
- Remaining courses specific to the appropriate track —
10-15 credits.

Professional/Technical Degrees and Certificates

Lower Columbia College offers a number of options that prepare students for entry into the workforce. Associate degrees in the Professional/Technical area are not generally considered transfer degrees, although exceptions may be allowed for certain programs upon approval. Representatives from local business and industry help define these programs so our graduates meet the standards defined by people in the workforce. See also "General Requirements for Earning Associate Degrees," above.

Associate in Applied Science (AAS)

To earn an AAS, you need:

- Minimum of 90 credits in courses numbered 050 and above.
- Communications requirement—5 credits. ENGL 100, ENGL& 101, ENGL& 102, or 110; BUS 119; or SPCH 110. See specific program planners for communication course requirements for each program of study.
- Quantitative skills requirement—5 credits. MATH 089 or higher, Math 105, Math 106 or BUS 104.

See specific program planners for math course requirements for each program of study.

- Human Relations requirement—2-5 credits. ANTH& 206; BUS 144, BUS 150, or BUS 240; CDS 102 or 215; ECED& 115 or 130; HDEV 110; NURS 101 or 202; PSYC& 100, PSYC 204, or 214; SOC& 101; or SPCH 104.
- Note: courses that meet Human Relations requirement may also be used to satisfy another requirement of the degree.
- Social Sciences, Natural Sciences, and Humanities requirement—10 credits. At least 5 credits each in two of these three areas.
- Minimum of 45 credits for specific courses identified in the degree program and recommended by the advisor.
- No more than 6 credits in PHED activity courses; no more than 15 credits in Cooperative Work Experience, Tutoring, and/or Independent Study. No more than 15 pass/fail credits. Students must maintain a 2.0 GPA in graded courses.
- Diversity requirement—5 credits. See quarterly schedule for diversity classes. Courses that satisfy this requirement may also be used to satisfy other graduation requirements.

Certificate of Proficiency (COP)

- 45 credits or more.
- Communications requirement—5 credits.
- Quantitative skills requirement—5 credits.
- Social Science/Human Relations requirement—5 credits.
- Some programs also have a Natural Sciences and/or Health requirement.

Certificate of Completion (COC)

This short-term program of occupational training consists of a sequence of courses totaling 1-44 credits. Many students choose to continue earning credits, going on to earn a certificate of proficiency or an associate degree.

Student Services & Activities

Advising

info@lowercolumbia.edu - 360.442.2311

The advising department offers information, support, and guidance from program and entry advisors. While students are responsible for their educational plan, advisors do assist with providing advice on career pathways, long range plans, and course selection for each specific program. Advisors are assigned based on their knowledge in the area of interest or field of study. Students who plan to earn a degree or certificate at LCC or to transfer to a baccalaureate institution, must meet with an advisor prior to registering each quarter.

Associated Students of Lower Columbia College (ASLCC)

lowercolumbia.edu/student-life/aslcc - 360.442.2450

All students enrolled at LCC, except those enrolled exclusively in non-tuition courses, pay a service and activity fee as part of their tuition and automatically become members of the Associated Students of Lower Columbia College. Pictures are taken and free student identification cards are issued to new students, while returning students are issued a sticker to renew their I.D. cards. A student I.D. card qualifies you for reduced or free admission to events sponsored by the ASLCC, including athletic events, concerts, dances, and theatre productions.

A fee is charged for replacing lost or stolen cards.

The ASLCC Student Government Executive Council is the student governing body. The Council meets to administer the ASLCC budget, develop committees to work on LCC campus issues, participate in the college's standing councils and committees, and represent LCC students in legislative issues that affect their education. ASLCC Student Government officers are elected each spring quarter.

Bookstore

lowercolumbia.edu/bookstore - 360.442.2240

Students will find new, used, and rentable textbooks, reference materials, general supplies, computer software, art and engineering supplies, gifts, LCC signature clothing, other LCC logo items, and much more at the LCC Bookstore, located on the first floor in the Student Center. A book buyback is held during finals week of each quarter. The Bookstore is also open to the public. Check the quarterly class schedule for hours and buyback dates. Students can also order books online at lowercolumbia.edu/bookstore. The Bookstore's primary

goal is to serve students and the staff welcomes suggestions about new products and services.

Career and Employment Services

lowercolumbia.edu/careerservices - 360.442.2330

The Career Center has multiple resources to assist students, graduates and community members in developing personalized career/education plans or to find a job. Several tools are available to help students identify careers that best match their interests, skills, and abilities. Online career information resources provide details about job duties, education requirements, working conditions, wages and occupational demand for specific work fields.

Career Specialists are available to help with career planning, exploration, and job search needs. Free workshops are provided on applying for college, Financial Aid applications, effective résumé writing, marketing job skills to potential employers, portfolio development, and resources for dislocated workers and low income adults.

Local employers and staff use our free College Central Network program to recruit students, graduates, and community members. Job seekers can post résumés, find work-based learning opportunities, locate internships and search for full and part time jobs on and off campus.

Childcare

lowercolumbia.edu/childcare - 360.442.2890

Licensed childcare for children one month through five years of age is available to LCC students, staff and faculty members. Limited enrollment is open to the community. In addition to high quality childcare services, LCC Early Learning Center offers a Pre-Kindergarten Readiness Program, and partners with the Longview School District for math and literacy assessments. All age groups have weekly lesson plans and teachers complete monthly assessments. Daily activities are developmentally appropriate and based on each child's goals. Full-day and half-day rates are available, and DSHS payments are accepted. Breakfast and afternoon snacks are provided; families provide lunch. The Early Learning Center operates on a year-round schedule and is open weekdays from 7:30 a.m. until 5:30 p.m.

Computer Labs

lowercolumbia.edu/computer-labs - 360.442.2712

Lower Columbia College maintains computing facilities equipped with the hardware and software required to support instructional programs, students, faculty, staff, and administration. To use campus computers and to access the Internet and student email, students must create an account username and password at lowercolumbia.edu/computer-labs. Wireless Internet

access is also available on campus to students with mobile devices.

Counseling Services

lowercolumbia.edu/counseling - 360.442.2311

Lower Columbia College provides counseling services for students, including personal, educational, and career counseling. Students can schedule an appointment with a counselor by contacting the Entry Center in the lobby of the Admissions Center, or by calling 360.442.2311. LCC's counselors are located in the Admissions Center. Individuals needing extensive personal counseling will be referred to services off-campus.

Dining

lowercolumbia.edu/cafe - 360.442.2241

The LCC Fork & Flame Cafe, Espresso Kiosk and provide a varied menu for students, staff and the community, including breakfast all day, hot lunch specials, soups, sandwiches, grill items, snacks and beverages. Catering service available. Hours vary according to academic year.

Disability Support Services

lowercolumbia.edu/disability - 360.442.2340 - TTY/ Video Relay Service 7-1-1 or 800.833.6388

A student with a documented disability may be eligible for accommodations or assistance through LCC's Disability Support Services office. Lower Columbia College is committed to providing support services to students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990. Disability Support Services coordinates services which may include reasonable accommodations, appropriate auxiliary aids, advising, admission, registration for classes, academic counseling, assistance with applying for financial aid, referrals to agencies, educational and vocational planning, even voter registration. Students are required to provide documentation of disability. To request services or for more information, visit the website, call or stop by the office in the Admissions Center, Room 143.

eLearning

lowercolumbia.edu/elearning - 360.442.2520

The eLearning Office is your resource as you use technology in the classroom. LCC uses the Canvas Learning Management System to support learning in classes that are fully online, hybrid (partially online and partially in the classroom), or on campus. To find out if online learning is for you and to learn about all of LCC's online resources, please visit the [eLearning webpage](#).

Fitness Center & Gym

lowercolumbia.edu/fitnesscenter - 360.442.2481

With a balance of free weights, selectorized machines, and aerobic equipment, the Red Devil Fitness Center offers something for everyone. Sign up for a Weight Training, Super Circuit, Zumba or Pilates class to add some 'positive' stress to your hectic schedule. Inhale...Exhale!

Head Start/Early Head Start/ECEAP

lowercolumbia.edu/head-start - 360.442.2800

Head Start/Early Head Start/ECEAP (Early Childhood Education and Assistance Program) is a federal and state funded comprehensive child and family development program that includes preschool, home visits, health and developmental screening, social service referrals, services to pregnant mothers, infant/toddler programs and parent involvement opportunities. Families must meet federal and state income guidelines to qualify.

Children who are three and four years old attend classes 3 - 5 days per week for 3-1/2 or 6 hours a day during the school year. A variety of developmentally appropriate learning experiences are provided to foster social, emotional, intellectual and physical growth. Early Head Start serves pregnant women and children birth to three years in three specific models: a weekly home base program, and a full day program for teen parents in collaboration with the Longview School District.

Head Start/Early Head Start/ECEAP support the parents' role as the primary educator of their child, and are encouraged to attend monthly parent meetings, participate on the Policy Council board and volunteer at any of the nine centers throughout Cowlitz County. Parents may register in HOFL 131, 132 and 133 for college credit.

Learning Commons

lowercolumbia.edu/library - 360.442.2660

The Learning Commons in the Alan Thompson Library Building in the Center of campus, combines the Library, eLearning, and the Tutoring Center. The Learning Commons provides help with studying, research, and specific classes.

Library Services

lowercolumbia.edu/library - 360.442.2660

Library Services is part of the Learning Commons and provides collections of print and electronic materials and resources. The online catalog includes holdings of the LCC Library, Longview Public Library, and Kelso

Public Library. Students can also find leisure reading paperbacks, group study rooms, computers, printers/copiers, a Smart Board, a Mondopad, a Whisper Room recording booth, and Chromebooks. The Library Services website provides access to online databases and guidelines for research. Students may request research instruction from librarians by phone, email, instant message, or in person at the library. Hours of operation are posted on the [Library webpage](#) and in the Learning Commons.

Multicultural Programs

360.442.2424

Multicultural Services is committed to the development of a more openhearted, inclusive and supportive environment based on awareness, acceptance and respect for all at Lower Columbia College. LCC has a strong commitment to attracting, admitting and educating a broad population of students reflecting a diversity of intellectual interests, as well as representation from different cultures, races/ethnicities, socio-economic backgrounds, gender, socio-political perspectives, religious affiliations and sexual orientation/identities from throughout Washington, and across the U.S. and around the world. This rich mixture of individuals enhances the academic and intellectual experience for all who come to LCC. We work to promote intellectual discourse, leadership and social justice among students, staff, faculty and our surrounding communities. Events include, but are not limited to: speakers, performers, cultural field trips, volunteering, leadership opportunities, conferences, and of course FUN!

Safety & Security/Parking

lowercolumbia.edu/safety - 360.442.2911

Lower Columbia College is committed to providing a safe and healthy campus environment. Security personnel patrol buildings and parking lots nearly 24-hours a day. Parking is provided for LCC students on a first-come, first-served basis in the parking lots surrounding the campus. (See parking lot locations on the Lower Columbia College Campus Map.) Students are issued an official parking decal upon payment of registration fees. Students must display the parking decal in their vehicle when parking on campus. To use a designated handicapped parking space, a disabled parking permit issued by the state must be displayed.

Student Clubs, Organizations & Groups

lowercolumbia.edu/student/student-life/clubs

ASLCC-subsidized co-curriculars, organizations and clubs are an opportunity for students to get involved outside of the classroom setting and pursue special

interests. Each group must complete an informational application, establish a membership list and have an advisor. The ASLCC Student Government Executive Council also funds activities on campus that are coordinated by committees. Some of the current ASLCC co-curriculars, organizations and clubs are:

- Associated Students of Lower Columbia College (ASLCC) Student Government
- Anime Club
- Board Game Club
- Brotherhood of Games
- Campus Christian Club
- Chemistry Club
- Choir
- Drama
- Electric Vehicle Club
- Engineering Club
- Fencing Club
- Film Club
- Forensics / Debate / Phi Rho Pi
- Global Medical Brigade
- Jazz Ensemble (Big Band)
- LGBTQ/Straight Alliance Club
- Longboarding Club
- Multicultural Club
- Pottery Club
- Salal Review (Literary & Arts)
- Science Fiction Club
- Student Nurses Organization (SNO)
- Sustainability Club
- Symphonic Band
- Veterans Alliance Organization
- Welding Club

Student Support Services

lowercolumbia.edu/trio - 360.442.2420

The Student Support Services program provides academic assistance to help students succeed in college. Students who are First Generation (neither parent has a bachelor's degree), low income, or have a documented disability qualify. This federally-funded TRIO program helps participants become more effective college students, stay in college, graduate on time, and transfer to a baccalaureate institution. Students receive advising, individualized tutoring, and peer mentoring, as well as help selecting a career and transfer school.

Transfer Center

lowercolumbia.edu/university-center/transfer-options - 360.442.2350

The Transfer Center, located in the Admissions Center, provides information to assist students to make a successful transition to a baccalaureate institution. Help

is available to select a transfer college or university, and to complete admission procedures, financial aid applications, and transfer admission requirements. The Transfer Center has transfer guides available explaining course transfer equivalencies.

Tutoring Services

lowercolumbia.edu/tutoring - 360.442.2572

Individual and group tutoring are free for LCC students. Well-qualified tutors help students in most college subjects, and are trained to aid students with mastering subject matter, improving study skills, and developing self-confidence. Tutoring Services also provides online tutoring.

University Center

lowercolumbia.edu/university-center - 360.353.7800

Five highly-respected universities have partnered with LCC to provide 11 bachelor's and two master's degree programs on the LCC campus. Advising staff and faculty are housed in the Center along with study areas and a high technology classroom designed to meet instructional needs, including WiFi access. Partners include City University of Seattle, Eastern Washington University, Warner Pacific College, and Washington State University.

Veterans Services

lowercolumbia.edu/veterans - 360.442.2395

Lower Columbia College offers U.S. Department of Veterans Affairs (VA) approved educational programs to eligible veterans and eligible dependents of deceased or totally disabled veterans under Title 38 and Title 10, U.S. Code. Eligible veterans qualify for help to process applications for VA educational benefits and receive information on eligibility, pay, and other VA matters. Resident veterans who served, or who provided direct support to American soldiers, in a combat zone may also qualify for special tuition rates and other financial aid.

Combat theater veterans and veterans who provided direct support to forces in a combat theater may be eligible for special tuition rates. Eligibility for these rates is determined by Veterans' Services staff. To qualify, a student must provide a copy of his or her DD Form 214, showing the award of either the Vietnam Service Medal or the Southwest Asia Service Medal.

Veterans Alliance Organization

All veterans who served in the Armed Forces and are attending or working at LCC are invited to participate in the Veterans Alliance Outreach Group. Veterans decide the agenda for each meeting, including topics such as:

- Navigating Veteran's Affairs system
- Financial Aid and scholarships opportunities

- Housing assistance
- Meet other student veterans
- Facing re-deployment
- Organizing campus functions
- Making the transition back home

Meetings are confidential. Counseling referral is available.

Workforce Education Information & Resources

LCC offers a variety of workforce education support programs, some of which can help students pay for college.

For information about requirements for certificate and degree programs, please see **Programs of Study**.

- **Apprenticeship Program**
- **Basic Food, Employment & Training (BFET)**
- **Cooperative Education**
- **Individualized Certificate Program (ICP)**
- **Opportunity Grant Program**
- **Worker Retraining**
- **Workfirst**

Apprenticeship Program

Apprenticeship combines employment, education and training in one workforce program. Employers and their employees develop, register and operate apprenticeship programs based on the needs of industry. Registered apprenticeship is governed by the Washington State Apprenticeship and Training Council (WSATC) under the authority of RCW 49.04 and WAC 296-05.

The Department of Labor and Industries Regional Apprenticeship Coordinator for Southwest Washington is located at the Longview L&I Service Office, 900 Ocean Beach Highway, phone 360.575.6927. The Apprenticeship website is: www.apprenticeship.lni.wa.gov. Employers wishing to develop an apprenticeship program can get help here.

Apprenticeship Training Committees (ATC) run apprenticeship programs for various trades as approved by the WSATC. Acceptance into an apprenticeship program is determined by the program's selection procedures. Two primary components include provisions for an employer/employee relationship with paid on-the-job training for a specific occupation and at least 144 clock hours of related supplemental (classroom) instruction per year. On-the-job training experiences are conducted under the direct supervision of a qualified journeyman who is affiliated with the apprentice's trade or program. Classroom instruction provides an opportunity to acquire knowledge and skills that supplement on-the-job training and work experience.

Lower Columbia College is a partner in the Registered Apprentice system and provides or supports the related supplemental classroom instruction when requested by an apprenticeship program. Also, students earning direct credit at LCC through the Career Pathways/Tech

Prep program may be eligible to apply those credits toward the supplemental instruction component of a registered apprenticeship program.

LCC's apprenticeship advisor can refer you to the ATCs for the programs the College supports and provide you with information on applying Tech Prep credit toward an apprenticeship. Once accepted into an apprenticeship program, you may register for approved courses at LCC. Tuition for apprentices taking their required apprenticeship classes at LCC is reduced by 50% under WAC 131.28. Registered apprenticeship is part of the state Workforce Development System. Apprentices may be eligible for training assistance vouchers. Many apprenticeship programs are approved for veteran's education benefits.

A registered apprentice in a program supported by LCC, or those with questions regarding programs supported by the College, call for information. For more information please contact Career & Employment Services at 360.442.2330.

Basic Food, Employment & Training (BFET)

In a partnership with Department of Social and Health Services (DSHS), Lower Columbia College offers opportunities for vocational education and career development to low income students who qualify to receive or are currently receiving federally issued basic food benefits.

While BFET does not provide tuition assistance to students at this time, students may qualify for other assistance such as child care and food benefits.

BFET allows students who are receiving federally issued basic food benefits to continue receiving those benefits while attending school. Participants are required to participate in monthly career exploration activities with BFET staff.

For more information, call 360.442.2332 or visit lowercolumbia.edu/bfet.

Eligibility

Students may be eligible for BFET if they:

- Are enrolled in an ESL, GED, IBEST or professional-technical degree or certificate program.
- Are a US Citizen, Refugee or Immigrant (US resident five years or more)
- Are NOT receiving Temporary Assistance for Needy Families (TANF)
- Are receiving or are eligible to receive Basic Food Benefits through the federal program.

- Are low income (please check with BFET coordinator for current income guidelines)

Cooperative Education (Credit for Work Experience)

Through cooperation between the student, instructor and an employer, one credit can be earned for every 33 hours of work related to a program of study at LCC. Many LCC programs have established Cooperative Education courses (Numbers 288/289). Students may enroll for a maximum of 15 credits toward a degree or certificate program; 1-5 credits of work experience (288) per quarter, plus a one-credit seminar (289) option. Cooperative work experience may be paid or volunteer work related to your program of study. Work Study jobs may qualify.

Students will be assigned to an instructor in the related field of study to guide them through the work-based learning process. Students will develop learning objectives with the assistance of an LCC instructor and job site supervisor, applying the theories, concepts and methods learned in the classroom to a real job setting. Students also take a one-credit Cooperative Education seminar to build a portfolio or research a work-related topic to help prepare for future employment.

To participate, students need to have completed nine credits of program-related courses and have at least a 2.0 GPA. To enroll, students must have permission from their LCC program instructors and receive entry codes for registration and the required agreements each quarter from the Cooperative Education office. Independent Study (299) credits also count toward the 15-credit maximum.

For more information, call 360.442.2330 or visit lowercolumbia.edu/workforce-education.

Individualized Certificate Program

The Individualized Certificate Program (ICP) offers an opportunity to pursue a custom-designed, work-based learning program that is not available through current apprenticeship or college programs. ICP allows the student to get real-world experience while working in their field of study. Individuals gain the experience needed for entry level employment or further specialized education.

Individualized Certificate Programs of study are designed to be completed in 12-18 months. Students should work closely with the ICP advisor to ensure that courses meet the program requirements.

All programs have limited enrollment, so check with the ICP advisor to determine available programs. Students are encouraged to complete a waitlist application which may be obtained by visiting Career & Employment Services (ADC 108).

For more information call 360.442.2311 or visit lowercolumbia.edu/icp.

Opportunity Grant Program

Unemployed or underemployed adults seeking a certificate or degree in a high demand career may be eligible for help with college expenses under the Opportunity Grant Program. The grant provides individualized support services, along with funding for tuition and fees, books, and/or tools for up to 45 credits.

Eligible students must be Washington State residents, meet income eligibility requirements, and enroll in one of the approved high demand career pathways (see lowercolumbia.edu/opportunity for complete list). Applicants must submit a Free Application for Federal Student Aid (FAFSA) to determine income eligibility but do not need to be awarded financial aid to qualify. For example, students who do not qualify for traditional financial aid for reasons such as default on a previous loan, cancellation of financial aid, or failure to register for Selective Service may qualify for an Opportunity Grant.

Students interested in applying to the program should attend an Opportunity Grant Information Session at the Career and Employment Center, located in the Admissions Center. Individualized support services offered through this program include assistance with education planning, financial aid, campus and community resources, and skill building.

For more information call 360.442.2338 or visit lowercolumbia.edu/opportunity.

Worker Retraining

Worker Retraining is a state-funded program that provides job-related training and employment services to dislocated and unemployed workers to help them gain additional training in their field or to get started on a new career. Students may receive additional funding to help pay for retraining tuition, books and fees or "jump-start" funding while waiting financial aid approval.

Students may also need to take additional steps to keep their unemployment benefits while attending training and possibly qualify to receive additional unemployment benefits. The college works with the Employment Security Department and other community agencies to provide services to dislocated workers. LCC offers educational planning, advising, and assistance with admissions, registration, and financial aid processes.

Eligibility

Students may be eligible for Worker Retraining if they:

- Are currently receiving unemployment benefits
- Have received unemployment benefits in the last 48 months.
- Will be losing their job in the immediate future
- Were self-employed but due to economic downturn or natural disaster have become unemployed or underemployed.
- Are a displaced homemaker (were dependent on another's income and that income ended due to a change of domestic circumstances)
- Are underemployed
- Are enrolled in a professional-technical degree or certificate program.

For more information call 360.442.2334 or visit lowercolumbia.edu/worker-retraining.

Workfirst

LCC's Workfirst Program assists parents receiving Temporary Assistance for Needy Families (TANF) from the Department of Social and Health Services.

The goal is to provide low-income families with stability and a path toward self-sufficiency. Participants receive additional support while they are attending a vocational or basic skills program.

WorkFirst staff at LCC are dedicated to assist students reach their educational goals through resource assistance, barrier removal, educational planning, and access to career services.

Available Options:

- High School Equivalence Exam prep
- High School completion through CEO or HS21+ program
- English as a Second Language (ESL) classes
- Vocational education in full or part-time programs and Continuing Education (see eligible program list below)

Washington State requires all parents receiving TANF to participate in a work-like activity to receive their cash grant.

Additional Support (*as funding allows*)

- College admission and testing expense vouchers.
- WorkFirst Financial Aid for students who are ineligible for federal financial aid funding consisting of tuition, fees, and books
- High School Equivalency exam class and testing fees
- Program required expenses such as background checks, First Aid/CPR testing, and state testing and certification fees for employment
- Educational planning.
- TANF Work Study opportunities (paid employment).
- Attendance and participation tracking for DSHS.

For more information call 360.442.2540 or visit lowercolumbia.edu/workfirst.

Basic Education for Adults

Adult Basic Education (ABE)

Adult Basic Education (ABE) classes are designed to help adult students, 16 years or older, acquire the skills needed to keep up with a demanding, technology driven job market, affordably and conveniently. To accommodate busy schedules, classes are available morning, afternoon, evening, and in a variety of online formats to help students:

- earn credits required to complete a Washington State High School Diploma
- prepare for the General Education Development (GED) exam
- develop or refresh the knowledge and skills required for college-level classes
- prepare for college entrance exams

Students study English and math in the context of science, history, government, occupational education, health, fine arts, and digital literacy. Classes are available on campus, online and at various locations including Goodwill Industries and Woodland Middle School. Tuition is just \$25 per quarter. Financial assistance is available for those who need it.

For more information, or to enroll, contact the Transitional Studies Department office at 360.442.2580, stop by Vocational Building, room 159, or visit lowercolumbia.edu/transitional.

English as a Second Language (ESL)

English as a Second Language (ESL) classes are designed to help adult students, 16 years or older, acquire the English skills needed to pursue a career pathway in a demanding, technology driven job market, affordably and conveniently. To accommodate busy schedules, classes are available morning and evening to help students:

- develop the English language skills required to transition into Adult Basic Education
- earn credits required to complete a Washington State High School Diploma
- prepare for the General Education Development (GED) exam

Students study English in the context of science, history, government, occupational education, health, fine arts, and digital literacy. Classes are available on campus, and at various locations including the Broadway Learning Center and Woodland High School. Tuition is just \$25 per quarter. Financial assistance is available for those who need it.

For more information, or to enroll, contact the Transitional Studies Department office at 360.442.2580, stop by Vocational Building, room 159, or visit lowercolumbia.edu/transitional.

High School 21+

Students, 21 years or older, who want to finish, or earn, a Washington State High School Diploma and prepare for college or career conveniently and affordably, enroll in the High School 21+ program (HS21+).

Tailored for adults with busy schedules, HS21+ high school credit bearing classes are available morning, afternoon, and evening at several locations including LCC, Goodwill, and Woodland and in a variety of formats including face-to-face, hybrid, and online.

Different than traditional high school completion programs, High School 21+:

- awards credit for prior learning achieved through work, life, and military experience
- awards credit for previous high school and college transcripts
- offers a diploma that is more accepted by the military than other equivalency options
- opens the door to federal financial aid for college
- helps to develop or refresh the knowledge and skills required for college-level classes
- helps students prepare for college entrance exams

Students must demonstrate competency in English and math in the context of required subjects including science, history, government, occupational education, health and fine arts. Tuition is just \$25 per quarter. Financial assistance is available for those who need it.

For more information, or to enroll, contact the Transitional Studies Department office at 360.442.2580, stop by Vocational Building, room 159, or visit lowercolumbia.edu/transitional.

I-BEST

I-BEST helps students with a fast track to career and student success!

Integrated Basic Education & Skills Training (I-BEST) is a proven program for student success. I-BEST students have double the certificate/degree completion rate, a result of hands-on training combined with twice the support and instruction to help students excel.

I-BEST faculty and professional/technical faculty work together in the classroom in a team teaching partnership and I-BEST instructors are available for up to five hours or more each week to assist students in an academic support classroom where instruction is targeted to classroom studies. College credits earned can be applied toward two year Associate degrees in high demand career fields, including:

- Business Management
- Diesel Technology/Heavy Equipment Preventative Maintenance
- Manufacturing Occupations--Welding & Machine Shop
- Early Childhood Education
- Business Technology Administrative Support
- Certified Nursing Assistant/Health Occupations Core
- Medical Assisting
- Medical Reception

For more information call 360.442.2584 or visit lowercolumbia.edu/transitional.

I-TRANS

Fast track to a transfer associate degree!

Many students need to improve English skills before they qualify to take college-level courses. Through the Integrated Transitional Studies (I-TRANS) program at LCC, you can earn college credit in social science, humanities or speech while you complete classes in English to prepare for college-level courses.

You learn both in one class with two instructors and the same students. You can complete several levels of English in a single quarter. You save time and money because you move more quickly toward your degree in a transfer program or professional-technical career field.

For more information call 360.442.2584 or visit lowercolumbia.edu/transitional.

High School Programs

Career Education Options (CEO)

The Career Education Options program offers 16 to 21-year-olds without a high school diploma the chance to return to school for the education and job training needed for a successful career. The CEO program provides the needed tools to succeed in the college environment.

Eligible students must meet the following criteria:

- between the ages of 16 and 21
- not currently in high school
- do not have a high school diploma
- live in Cowlitz or Wahkiakum County

Students may have a GED and still be eligible.

Career Education Options (CEO) is a mix of direct instruction and self-paced courses that apply toward high school graduation requirements. Students may take both high school level and college level courses that satisfy high school graduation requirements.

Students who qualify for enrollment in the CEO program, receive tuition, books, tutoring, and one-on-one help with clarifying educational and career goals.

For more information visit the website, call 360.442.2691, or e-mail ceo@lowercolumbia.edu.

Career Pathways/Tech Prep

Tech Prep is a dual credit program where LCC partners with area high schools to provide technical preparation in selected fields of study that could lead to an associate's degree, apprenticeship certification, or professional/technical certifications. High school students may earn free college credit by earning a B or better in a Tech Prep course offered at their school. Check the high school course catalog for specific career-technical education (CTE) courses listed as Tech Prep. Earning Tech Prep credit while in high school gives students a head start on an Associate in Applied Science degree at LCC and may also meet requirements for related instruction in a registered apprenticeship program. Ask the high school CTE instructor or counselor about Tech Prep or contact the Career Pathways Office at LCC.

For more information, call 360.442.2610 or visit lowercolumbia.edu/career-pathways.

Educational Talent Search

The Educational Talent Search program at Lower Columbia College serves approximately 500 lower income and first-generation-college students in the Longview and Kelso school districts. The program assists middle school and high school students in

their educational transitions through secondary school and into higher education. ETS services are aimed at creating positive opportunities for youth in the academic, social and cultural arenas in order to enhance a sense of belonging, achievement, exploration and competence.

Middle school students participate in workshops, field trips and cultural activities to discover their talents and set up the building blocks for their futures. They match their interests to career options and to college programs that best meet their goals. Students also learn the importance of good grades and discover strategies of successful students. High school services include college orientation activities, assistance with admission and financial aid applications, college visits and classroom presentations and workshops designed to prepare students for college.

For more information call 360.442.2421

General Education Development (GED)

Lower Columbia College is an official GED testing center. Adults who did not finish high school may earn high school credentials by taking this series of four tests. Practice and instruction is also available to help pass the GED test. Students review and receive help with writing skills, social studies, science, reading, literature and arts, mathematics and test taking. Students work individually or in small groups with the assistance of an instructor. Classes are available at LCC and at community locations. For the GED testing schedule and class sites, call 360.442.2353 or visit lowercolumbia.edu/ged.

High School 21+

Students, 21 years or older, who want to finish, or earn, a Washington State High School Diploma and prepare for college or career conveniently and affordably, enroll in the High School 21+ program (HS21+).

Tailored for adults with busy schedules, HS21+ high school credit bearing classes are available morning, afternoon, and evening at several locations including LCC, Goodwill, and Woodland and in a variety of formats including face-to-face, hybrid, and online.

Different than traditional high school completion programs, High School 21+:

- awards credit for prior learning achieved through work, life, and military experience
- awards credit for previous high school and college transcripts
- offers a diploma that is more accepted by the military than other equivalency options
- opens the door to federal financial aid for college
- helps to develop or refresh the knowledge and skills required for college-level classes
- helps students prepare for college entrance exams

Students must demonstrate competency in English and math in the context of required subjects including science, history, government, occupational education, health and fine arts. Tuition is just \$25 per quarter. Financial assistance is available for those who need it.

For more information, or to enroll, contact the Transitional Studies Department office at 360.442.2580, stop by Vocational Building, room 159, or visit lowercolumbia.edu/hs-21.

Running Start

Through Running Start, qualified high school juniors and seniors may earn both high school and college credits by attending college classes. Eligible students may enroll in a full range of professional/technical and academic courses for university or college transfer.

Students attend regular Lower Columbia College classes during the school day, in the evening or online. Upon satisfactory completion of the course requirements, they will receive college credit that is fully transferable to most colleges and universities. These credits also apply to their high school diploma. To be admitted to the Running Start program, a student must place into college-level writing and reading, participate in an orientation and apply by the published deadline. For more information or to apply, a student should contact the Lower Columbia College Running Start Office.

For more information call 360.442.2352 or visit lowercolumbia.edu/runningstart.

Corporate & Continuing Education

Corporate & Continuing Education at Lower Columbia College assists individuals and business/industry to meet their personal, professional and corporate education and training needs.

Through Corporate & Continuing Education, LCC offers a variety of services supporting workforce development and customized training. Working with area business, industries and agencies, LCC offers WorkKeys profiling and assessment services to provide employers, employees and job seekers with direct information regarding the skills needed to succeed in various jobs. Employees and job seekers can measure their skills and compare them to skill profiles for specific jobs. Follow-up training using KeyTrain and other tools is available. Skill proficiency is documented with a National Career Readiness Certificate, which can be used to document the level attained for critical work-related job skills.

Support for companies looking for specialized training is also available. LCC frequently works with employers to provide or arrange customized training in a variety of areas, including job-specific Spanish language courses, quality assurance, business computer applications, customer service, and other areas critical to organizational success. Workforce grants are often available through the community college system that may offset the costs of training.

LCC Corporate & Continuing Education also offers a variety of non-credit short-term and online classes, seminars and workshops. Courses are designed for busy adults who want personal enrichment, professional development and/or recreations. No state resources are used for these courses. Classes are held on campus and at churches, retirement centers, and other locations in the community. Community Education courses, fees and registration procedures are listed in the quarterly class schedule.

LCC Corporate & Continuing Education offers short-term certifications and training for health care fields.

- LCC offers DSHS approved continuing education courses to meet current CE requirements for caregivers. Family caregivers, nursing students, medical assistants, RNs, and LPNs may also take these courses. Please check with your sponsoring agency to determine the appropriate courses.
- Nurse Delegation for Nursing Assistants and Nurse Delegation Diabetes is a self-study training course for Nursing Assistants who will accept and perform tasks delegated by a Registered Nurse (RN). Nurse Delegation Diabetes Focus also available. Each course includes textbook and proctored exam.

- LCC offers both 4 and 7-hour HIV/AIDS certification that meets Washington Department of Health Professional Licensing requirements. Follow these steps to take your course: register in Admissions, purchase your text in the College Bookstore, and check out the DVDs in the LCC College Library. Complete instructions are included in your text

For more information about healthcare courses contact Mary Harris at 360.442.2602 or mharris@lowercolumbia.edu, or visit lowercolumbia.edu/ce.

For more information about other Continuing Education courses, call 360.442.2600 or visit lowercolumbia.edu/ce.

Distribution Lists

LCC students must meet distribution requirements for associate degrees and specific certificates. Information about distribution requirements is located on individual **program planners**.

See **Programs of Study (Program Planners)**.

- **Diversity Course List**
- **Distribution List for Professional/Technical Degrees**
- **Distribution List for Transfer Degrees**

Diversity Course List

Course Number	Course Name
ANTH& 100	Survey of Anthropology
ANTH 109	American Cultural Diversity
ANTH& 206	Cultural Anthropology
ART& 100	Art Appreciation
ART 206	Arts of the Americas
ART 207	Arts of the World
ART 208	Arts of the Northwest
ART 228	History of Western Art
ASL& 123	American Sign Language III
BUS 144	Management of Human Relations
CHIN& 121	Chinese I
CHIN& 122	Chinese II
CHIN& 123	Chinese III
EDUC& 205	Introduction to Education w/Field Experience
ENGL 140	Intro to Women Writers
ENGL 245	Contemporary Literature
ENGL 246	Rainbow Readers:LGBTQ Literature
ENGL 280	Multicultural Literature
ENVS 150	Environment and Society
HIST& 126	World Civilization I
HIST& 127	World Civilization II
HIST& 128	World Civilization III

Course Number	Course Name
HIST 205	History of East Asia
HIST& 215	Women in U.S. History
HUM 104	Ethics and Cultural Values
HUM 164	Cultural Journeys
HUM 210	Myths and Rites
MUSC 117	Music Cultures of the World
MUSC 119	American Music
MUSC 209	The Blues Culture
SOC& 101	Introduction to Sociology (Includes WAOL's SOC& 101)
SOC 210	Human Sexuality
SOC 225	Race and Ethnicity
SPAN& 121	Spanish I
SPAN& 122	Spanish II
SPAN& 123	Spanish III
SPCH 109	Intercultural Communication
SPCH 209	Rhetorical Criticism and Popular Culture

Distribution List for Professional/Technical Degrees

Human Relations

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

ANTH& 206
 BUS 144, 150, 240
 CDS 102, 215
 EDUC& 115, 130
 HDEV 110
 NURS 101, 202
 PSYC& 100, PSYC 204, 214
 SOC& 101

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, ART 101*, 102*, 103*, 106*, 107*, 108*, 111*, 112*, 113*, 155*, 154*, 156*, 157*, 158*, 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, DRMA 106*, 107*, 108*

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& 235, 244

HIST& 116, 126

HUM 104, 107, HUM& 116, 117, 118, HUM 150, 164, 210, 220, 230, 250, 251

MUSC 100, 101, 102, 103, 117, 119, 130*, 134*, 135*, 141*, 142*, 143*, 145, 150*, 151*, 152*, 153*, 176*, 177*, 178*, 209, 222, 241*, 242*, 243*, 251*, 252*, 253*, 276*, 277*, 278*, MUSC& 105

PHIL& 101, PHIL 210, 260

SPAN& 121, 122, 123, 221, 222, 223, SPAN 110, 114

SPCH 104, 109, 110, 114, 209

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

ANTH& 205

ASTR& 101**

BIOL 109**, 130**, 150**, BIOL& 100**, 160**, 179**, 211**, 212**, 213**, 241**, 242**, 260**

BUS 206, 207

CHEM& 110**, 121**, 131**, 161**, 162**, 163**, 261**, 262**, 263**, CHEM 231**

DHET 141

ERSI 104**, 105**, 109**

ENGR 106, 210

ENVS 150, 215**

GEOG 105**

GEOL 105**, 118**, 124, GEOL& 101**, 208**

MFG 130

MATH& 107, 132, 148, 151, 152, 153, 141, 142, MATH 125, 254, 210, 211, 220, 240

NUTR& 101

OCEA& 101**

PHYS& 100**, 114**, 115**, 116**, 221**, 222**, 223**, PHYS 210,

PHSC 108**, 109**

TECH 100

Social Sciences

ANTH& 100, ANTH 109, ANTH& 206

BUS& 101, 144, 201

CDS 101

CJ& 101, 110

ECON 104, 105, 201, 202

HIST& 117, 127, 128, 136, 137, 215, HIST 205, 214, 254

POLS& 101, 202, 203, 204

PSYC& 100, 200, PSYC 150, 204, 214, 220, 250

SOC& 101, SOC 210, 225

Distribution List for Transfer Degrees

Humanities¹

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.**

ART& 100, ART 101*, 102*, 103*, 106*, 107*, 108*, 111*, 112*, 113*, 155*, 154*, 156*, 157*, 158*, 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, DRMA 106*, 107*, 108*

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& 235, 244

HIST& 116, 126

HUM 104, 107, HUM& 116, 117, 118, HUM 150, 164, 210, 220, 230, 250, 251, 255

MUSC 100, 101, 102, 103, 106, 107, 108, 115, 117, 119, 130*, 134*, 135*, 141*, 142*, 143*, 145, 150*, 151*, 152*, 153*, 176*, 177*, 178*, 206, 207, 208, 209, 222, 241*, 242*, 243*, 251*, 252*, 253*, 276*, 277*, 278*, MUSC& 105

PHIL& 101, PHIL 210, 260

SPAN& 121, 122, 123, 221, 222, 223, SPAN 110, 114

SPCH 104, 109, 110, 114, 209

Natural Sciences¹

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

Physical Sciences	Biological Sciences	Earth Sciences
CHEM& 110**, CHEM& 121**, 131**, CHEM 231**	ANTH& 205, BIOL& 100**, BIOL& 160**, and PHYS 210	ASTR& 101**, ERSI 104** or 105**, 109**, OCEA& 101**, GEOL 105**, 118**, GEOL& 101** and 208**
PHSC 108** and 109**		

Physical Sciences	Biological Sciences	Earth Sciences
CHEM& 161**, 162**, 163**, CHEM 231**	BIOL& 170, BIOL& 211**, 212**, 213**, BIOL& 241**, BIOL& 242**, BIOL& 260**, BIOL 109**, 130**, 150**, and 179**	GEOL 105**, GEOL 105**, 118**, GEOL& 101** and 208**
CHEM 261**, 262**, 263**, and		
PHYS& 100**, 114**, 115**, 116**, 221**, 222**, 223**, and		
PHSC 108** and 109**	NUTR& 101	

BUS 206, 207

ENGR 106, 210

MATH& 107, 132, 148, 151, 152, 153, 141, 142, MATH 125, 210, 211, 220, 240, 254

Social Sciences¹

15 credits from at least 3 disciplines.

ANTH& 100, ANTH 109, ANTH& 206

BUS& 101, BUS& 201

CDS 101

CJ& 101, 110

ECON 104, 105, ECON& 201, 202

HIST& 117, 127, 128, 136, 137, HIST 205, 214, 215, 254

POLS& 101, 202, 203, 204

PSYC& 100, 200, PSYC 150, 204, 214, 220, 250, 255

SOC& 101, SOC 210, 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, 275

AH – all courses

AMTC – all courses

APPEL—all courses

BLPT—all courses

BUS 104, BUS 119, BUS 165, BUS 259, 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, 107, 180, 204, 220

EDUC – all courses except 150, 205

ENGL 100, 104

FISC—all courses

HLTH 100

HOFL—all courses

HDEV—all courses

ICP 101, 102

LIBR – all courses

MASP—all courses

MATH 105, 106

MEDA—all courses

MFG—all courses

MUSC 115

NURS—all courses

**PHED – 104, 105, 106, 110, 120, 125, 126, 127, 128, 130, 139, 152, 155, 204, 205, 210, 215, 216, 220, 226, 227, 228, 230, 252

PMFG – all courses

TECH—100, 170

WELD—all courses

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Associate in Applied Science (AAS)**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

- **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).
- **Human Relations/Social Sciences/Diversity:**
5 credits – BUS 144 Management of Human Relations:DIV.
- **Humanities or Natural Sciences:**
5 credits – from the Distribution List for Professional/ Technical Degrees.

Program Requirements

ACCT 101	Intro to Accounting Concepts	5
ACCT 150	Payroll Accting/Bus Tax Reporting	5
ACCT& 201	Principles of Accounting I	5
ACCT& 202	Principles of Accounting II	5
ACCT& 203	Principles of Accounting III	5
ACCT 241	Intro to QuickBooks	5
ACCT 244	Individual Income Taxation	5
ACCT 275	Accounting Tech Capstone	5
ACCT 288/289	Cooperative Education	5
BUS& 101 OR ECON& 201 OR ECON 105	Intro to Business OR Micro Economics OR Intro to Economics	5
BTEC 130	Electronic Calculators	1
BUS& 201	Business Law	5
CS 110	Intro to Microcomputers	3
CS 121	Intro to Spreadsheets	5
CS 130	Intro to Database Applications	5

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

BUS 150	Customer Service/Management	5
ECON& 202	Macro Economics	5
SPCH 114	Small Group Communications	5

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

Total credits required to earn this degree: 91 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Revised June 2015 (effective Fall 2015)

Associate in Applied Science (AAS)

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

- **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.

Program Requirements

ACCT 101 or	Intro to Accounting Concepts	5
ACCT 135	Accounting for Non-accountants	5
BUS& 150	Customer Service/Mgmt	5
BUS 264	Principles of Marketing	5
BUS 270	Intro to Project Management	5
BTEC 104	Intro to Business Technology	5
BTEC 111	Word Processing I	5
BTEC 112	Word Processing II	5
BTEC 148	Intro to Outlook	2
BTEC 260	Office Procedures	5
BTEC 294	Career Success	2

CS 111	Intro to Windows	4
CS 121	Introduction to Spreadsheet Apps	5
CS 122	Advanced Spreadsheet Apps	5
CS 130	Introductory Database Applications	5
CS 230	Database Development	5
ENGL& 235	Technical Writing	5

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

Total credits required to earn this degree: 93 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

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 July 2016 (Effective Winter 2016)

Certificate of Proficiency (COP)

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.

Gainful Employment Program Disclosure Data <http://lowercolumbia.edu/programs/gainful-employment>

Certificate Requirements

- **Communications:**
5 credits - ENGL& 101 English Composition I OR BUS 119 Business Communications.
- **Quantitative/Symbolic Reasoning Skills:**
5 credits – BUS 104 Business Math Applications OR MATH 088/089 Pre-College Math II.
- **Human Relations:**
5 credits – BUS 144 Management of Human Relations:DIV recommended.

Program Requirements

BTEC 104	Intro to Business Technology	5
BTEC 111	Word Processing I	5

BTEC 112	Word Processing II	5
BTEC 130	Electronic Calculators	2
BTEC 144	OneNote Fundamentals	1
BTEC 148	Intro to Outlook	2
BTEC 260	Office Procedures	5
BTEC 294	Career Success	2
CS 111	Intro to Windows	4
CS 121	Intro to Spreadsheets	5

Total credits required to earn this certificate: 51 and pass each course listed in program requirements with a C or better.

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

Revised May 2015 (Effective Fall 2015)

Associate in Applied Science (AAS)

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

- **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 106 Industrial Mathematics.
- **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	5
BLPT 160	Blueprint Reading for Welders	
CS 110	Intro to Microcomputer Apps	3
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop (2-10 cr variable) for a combined total of 10 credits	10
MFG 115	Manufacturing Processes	5
MFG 120	Quality Assurance	4
MFG 140	Industrial Hydraulics	4
MFG 230	Computer Integrated Manf	4
PMFG 110	Industrial Maint Fundamentals	5
PMFG 150	Elec/Electronic Fundamentals	6
PMFG 151	Process Control Equipment	5
PMFG 152	Process Control Systems	5
PMFG 201	Electrical Control Equipment	3
PMFG 202	Electric Motors	2
PMFG 210	Adv Industrial Maintenance	5
WELD 105	Related Welding I	6

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

Total credits required to earn this degree: 95 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Revised May 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Anthropology

Anthropology is the study of human biological, cultural and social diversity. With an emphasis upon a comparative perspective, anthropology studies the human condition on a global scale and throughout the course of human

history. Within the discipline of anthropology, the four fields of study are biological anthropology (human evolution), cultural anthropology, archaeology and anthropological linguistics. Prepare for advanced studies in anthropology at a baccalaureate institution and eventual employment in government agencies or academic profession. Employment most often requires completion of post-graduate degree.

Degree Requirements

- **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.
- **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.
- **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:**
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 Electives

ANTH 109	American Cultural Diversity:DIV	5
ART 207	Arts of the World:DIV	5
ART 227	History of Western Art	5
BIOL 150	Human Genetics & Society:DIV	5
ENVS 150	Environment and Society:DIV	5
SOC 225	Race and Ethnicity:DIV	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 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.

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.

Revised May 2014 (Effective Fall 2014)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Art

At LCC, students may select beginning and advanced courses in a variety of 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

- **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.
- **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: ART& 100 – Art Appreciation: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 Electives

ART& 100	Art Appreciation:DIV	5
ART 101	Beginning Drawing	3
ART 106	Basic Design	5
ART 111	Beginning Painting	3

ART 155	Beginning Digital Photography	5
ART 162	Photoshop for Web or Print	3
ART 206	Arts of the Americas:DIV	5
ART 207	Arts of the World:DIV	5
ART 208	Arts of the Pacific Northwest	5
ART 226	History of Western Art	5
ART 241	Beginning Ceramics	3

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised June 2015 (Effective Fall 2015)

Associate in Applied Science (AAS)

Automotive Technology

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

- **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.
- **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 – 9 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.)

Program Requirements

AMTC 100	Essentials of Mechanics	5
AMTC 101	Electrical Systems	5

AMTC 102	Electrical Systems II	10
AMTC 104	Vehicle Climate Control	8
AMTC 111	Hydraulic Brakes	5
AMTC 112	Antilock Brakes/Traction Control	3
AMTC 121	Gas Engines I	5
AMTC 122	Gas Engines II	10
AMTC 201	Fuels and Emissions	12
AMTC 202	Automotive Computer Systems	12
AMTC 215	Suspension and Alignment	8
AMTC 216	Automatic Transmission	8
AMTC 217	Powertrains	6

Diversity and 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 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Revised May 2015 (effective Fall 2015)

Certificate of Completion (COC)

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

BTEC 105	Keyboarding Speed/Accuracy	1
BTEC 104	Intro to Business Technology	5
BTEC 111	Word Processing I	5
BTEC 130	Electronic Calculators	2
BTEC 148	Intro to Outlook	2
CS 111	Intro to Windows	4

Total credits required to earn this certificate: 19

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

Revised July 2016 (Effective Fall 2014)

AS-T BIO/CHEM E/MRP

Bioengineering & Chemical Pre-Engineering

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

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative/Symbolic Reasoning Skills:**
20 credits – MATH& 151* Calculus I, MATH& 152* Calculus II, MATH& 153* Calculus III, AND MATH 240 Differential Equations.
- **Humanities/ Social Sciences:**
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.
- **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.

Pre-Major Requirements (40 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
CHEM& 261*	Organic Chemistry w/Lab I	5
BIOL& 211*	Majors Biology Cellular OR	5
CHEM& 262*	Organic Chemistry w/Lab II	
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Electives

BIOL& 211*	Majors Biology Cellular	5
BIOL& 212*	Majors Biology Animal	5

CHEM& 262*	Organic Chemistry w/Lab II	5
CHEM& 263*	Organic Chemistry w/Lab III	5
CS 170	Computer Programming	5
ENGL& 235	Technical Writing	5
ENGR& 204	Electrical Circuits	6
ENGR& 224	Thermodynamics	5
MATH& 254* (was MATH 154)	Calculus IV	5
MATH 220	Linear Algebra	5

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

Total transferable credits required to earn this degree: 90 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.

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 November 2014 (Effective Fall 2015)

Associate in Sciences - Transfer (AS-T)

Biological Sciences

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

- **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: ENV5 150 Environment and Society:DIV.

Pre-Major Requirements

BIOL& 211*	Majors Biology Cellular	5
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BIOL& 212*	Majors Biology Animal	5
BIOL& 213*	Majors Biology Plant	5
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
CHEM& 261*	Organic Chemistry w/Lab I	5
CHEM& 262*	Organic Chemistry w/Lab II	5
MATH 210	Elements of Statistics OR	5
MATH& 153*	Calculus III	

Electives

BIOL130	Biodiversity and the Pacific NW	5
BIOL& 260	Microbiology	5
CHEM& 263*	Organic Chemistry w/Lab III	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised February 2012 (Effective Fall 2012)

Biology DTA/MRP

Biology

This pathway is applicable to students planning to prepare for upper division Bachelor's degree majors in Biology, including the medical field. This Biology MRP streamlines and facilitates preparation for upper division coursework in Biology across the state. Students planning a career in medicine, medical technology, dentistry, chiropractic, pharmacy, physical therapy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields.

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. A number of medical schools require a foreign language.

Degree Requirements

- **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& 151 Calculus I
- **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.
- **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.
- **Natural Sciences:**
30 credits – BIOL& 211 Majors Biology Cellular, BIOL& 212 Majors Biology Animal, BIOL& 213 Majors Biology Plant, CHEM& 161 General Chem w/Lab I, CHEM& 162 General Chem w/Lab II, and CHEM& 163 General Chem w/Lab III.
- **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.
- **Electives:**
15 credits - No more than 15 credits may be taken from the Restricted Course List on the Distribution List for Transfer Degrees.

Suggested Electives (15 credits)

CHEM& 261	Organic Chemistry w/Lab I	5
CHEM& 262	Organic Chemistry w/Lab II	5
CHEM& 263	Organic Chemistry w/Lab III	5

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

Total transferable credits required to earn this degree: 90 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.

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

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

Core Competencies*

- Apply the scientific method of problem solving.
- Use quantitative reasoning to interpret data
- Demonstrate critical thinking.
- Express ideas and information in writing in a format that is clear and appropriate to both scientific and non-scientific audiences.
- Evaluate and explain the relationship between science and society.

Core Concepts*

- Apply the concepts of evolution to the diversity and adaptation of living organisms.
- Explain how matter and energy are stored and transformed by living systems.
- Explain how information is stored, copied, transferred, and expressed in biological systems.
- Describe the structure and function of biological components at various levels.
- Describe the significance of systems in maintaining life.

*Vision and Change: A Call to Action, AAAS (American Association for the Advancement of Science) with support from NSF (National Science Foundation)

Created June 2016 (Effective Fall 2016)

Associate in Business DTA/MRP

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

• 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).

• 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.

• 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.

• Social Sciences:

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.

• 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)

Business Courses (20 credits)

ACCT& 201*	Principles of Accounting I	5
ACCT& 202*	Principles of Accounting II	5
ACCT& 203*	Principles of Accounting III	5
BUS& 201	Business Law	5

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

Total transferable credits required to earn this degree: 90 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.

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

Universities with a lower division Business Law requirement: UW (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.

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

- Develop an understanding of market economies, supply and demand, cost benefit principles, resource allocation and key microeconomic terms.
- Analyze macroeconomic theories, fiscal and monetary policy, the banking system and Federal Reserve, factors affecting economic growth and international trade and finance.
- Apply a variety of mathematical and statistical procedures to accounting, business, and economic data and interpret the results to arrive at informed business decisions.
- Demonstrate an understanding of our legal system, the importance of contractual relationships, and the ethical implications of business transactions.
- Work effectively in collaborative/team environments to solve problems and complete projects.
- Develop skills utilizing common technological tools to conduct research and solve problems.
- Demonstrate the ability to use accounting and business terminology effectively in oral and written communication.
- Analyze and record business transactions in accordance with Generally Accepted Accounting Principles, communicate financial information about an organization and financial statement analysis.

Revised May 2016 (Effective Spring 2016)

Associate in Applied Science (AAS)

Business Management

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

- **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. SPCH 110 Intro to Public Speaking is recommended.

• **Electives:**

3 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.

Program Requirements

ACCT 101	Intro to Accounting Concepts OR	5
ACCT 135	Accounting F/Non Accountants OR	
ACCT& 201	Principles of Accounting I	
BUS& 101	Introduction to Business	5
BUS 150	Customer Service/Mgmt: DIV	5
BUS 165	Salesmanship	5
BUS& 201	Business Law	5
BUS 240	Principles of Supervision	5
BUS 244	Human Resource Management	5
BUS 245	Principles of Management	5
BUS 259	Start/Managing a Small Business	5
BUS 264	Principles of Marketing	5
BUS 270	Introduction to Project Mgmt	5
BUS 294	Career Success	2
CS 121	Introduction to Spreadsheets	5
ECON 105	Introduction to Economics OR	5
ECON& 201	Micro Economics	

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

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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

- Perform basic bookkeeping and accounting tasks manually and using Microsoft Excel and Industry standard 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.

Revised June 2015 (Effective Fall 2015)

Associate in Applied Sciences - Transfer (AAS-T)

Business Management

for 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

- **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 Sciences:**
10 credits – BUS& 201 Business Law AND ECON 105 Intro to Economics OR ECON& 201 Micro Economics.
- **Electives:**
2 credits – See advisor for approved courses.

Program Requirements

ACCT& 201	Principles of Accounting I	5
BUS& 101	Introduction to Business	5
BUS 150	Customer Service/Mgmt	5
BUS 165	Salesmanship	5
BUS 240	Principles of Supervision	5
BUS 245	Principles of Management	5
BUS 259	Start/Managing a Small Business	5
BUS 264	Principles of Marketing	5
CS 121	Introduction to Spreadsheets	5

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

Total credits required to earn this degree: 90 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.

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.

Revised September 2013 (Effective Fall 2013)

Associate in Applied Science (AAS)

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

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:**
5 credits – MATH 087/097 Essentials in Pre-College Math II/III OR MATH& 107 Math in Society 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 (5 cr.), OR BIOL& 242 Human A & P II (5 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.
- **Electives:**
8 credits minimum.

Program Requirements

CDS 101*	Intro to Addictions and Chem Depend	5
CDS 102*	Intro to Theories/Counsel CDC	3
CDS 107	Adolescent Dev Issues and Chem Depend	3
CDS 110*	Alcohol/Drug Pathophysiology and Pharmacology	3
CDS 111*	Record Keeping and Case Mgmt	3
CDS 113	Treatment Principles of Chem Depend	3
CDS 121*	Legal & Ethical Issues in Chem Dep Studies	3

CDS 201	Dynamics of the Family and Chem Depend	3
CDS 202	Chem Dep Counseling with Diverse Pop	3
CDS 203	Relapse Prevention and Intervention	3
CDS 215*	Group Counseling: Theories/Applic.	3
CDS 220	Co-Occurring Disorders	3
CDS 288	Cooperative Work Experience	10
CDS 289*	Employment Portfolio Seminar	1
HLTH 100	Occupational Safety and Health	3
PSYC& 200	Lifespan Psychology	5

Electives

(choose 2 or 3 of the following for a minimum of 8 credits)

CDS 105	Chemical Dependency/Domestic Violence	3
CDS 108	Running School-Based Support Groups	4
CDS 114	Suicide Assessment/Prevention	2
PSYC& 220	Abnormal Psychology (PSYC& 220 not offered every quarter. Check with advisor.)	5

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

Total credits required to earn this degree: 90-92 with a "C" or higher in the program requirements.

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

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.

Revised October 2015 (effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Chemical Dependency Studies

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

- **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.
- **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.
- **Social Sciences / Diversity:**
15 credits – SOC& 101:DIV, PSYC& 100, CDS 101.
- **Electives:**
25 credits – PSYC& 200, 15 credits of CDS courses (not including CDS 101), and 5 credits from the non-restricted course list.

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

Total credits required to earn this degree: 90 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.

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.

Revised April 2015 (Effective Fall 2015)

Associate in Sciences - Transfer (AS-T)

Chemistry

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

- **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.

Pre-Major Requirements

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

CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
MATH 210	Elements of Statistics OR	5
MATH& 153*	Calculus III	
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5
CHEM& 261*	Organic Chemistry w/Lab I	5
CHEM& 262*	Organic Chemistry w/Lab II	5
CHEM& 263*	Organic Chemistry w/Lab III	5

Recommended Electives

CHEM 231	Quantitative Analysis	5
MATH 220	Linear Algebra	5
MATH 240	Differential Equations	5

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

Total transferable credits required to earn this degree: 90 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.

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

- Will have foundations in the concepts and applications of current chemical and scientific theories.
- Ability to design, carry-out, record and analyze the results of chemical experiments.
- Ability to use modern instrumentation and classical techniques to design experiments, and to properly record the results of their experiments.
- Skilled in problem solving, critical thinking, and analytical reasoning.
- 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, Revised communication, and interpersonal skills.

Revised July 2012 (Effective Fall 2012)

Certificate of Completion (COC)**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

CS 110	Intro to Microcomputer Apps	3
BTEC 164	Legal Aspects of the Medical Office	2
BTEC 165	Cultural Awareness in Healthcare	2
BTEC 181 OR MEDA 101	Medical Terminology I OR Medical Vocabulary I	3
CDS 108	Comm & School Based Prev/Interv	4
HLTH 105	First Aid/CPR/BB Pathogen	1
AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2

Additional Non-Credit Requirements

	Mental Health First Aid	0.8 CEU
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Total credits required to earn this certificate: 19 and pass each course listed in the program requirements with a C or above.

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

Revised October 2015 - Effective Winter 2015

AS-T COMP E EE/MRP

Computer & Electrical Pre-Engineering

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

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

Pre-Major Requirements (41 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CS 170	Computer Programming	5
CS 270	Data Structures I	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5
ENGR& 204	Electrical Circuits	6

Recommended Electives

BIOL& 211	Majors Biology Cellular	5
CHEM& 162*	General Chemistry 2/Lab II	5
ENGL& 235	Technical Writing	5
ENGR 205**	Design of Logic Circuits	5
ENGR 206	Microprocessor Systems	5
ENGR& 214	Statics	5
ENGR& 215	Dynamics	
ENGR& 224	Thermodynamics	5
MATH& 254*	Calculus IV	5
(was MATH 154)		

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

Total transferable credits required to earn this degree: 90 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.

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 November 2014 (Effective Fall 2015)

Certificate of Completion (COC)

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.

Certificate Requirements

DRFT 107	Technical Graphics	3
DRFT 210	Advanced Technical Graphics	3
DRFT 252	Advanced Computer Aided Drafting	3
DRFT 260	Survey of Civil and Architectural Graphics	3
MFG 115	Manufacturing Processes OR	5
MFG 130	Materials Science	

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.

Revised September 2012 (Effective Fall 2012)

Certificate of Proficiency (COP)**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.php>

Certificate Requirements

- **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

DRFT 107	Technical Graphics	3
DRFT 210	Advanced Technical Graphics	3
DRFT 252	Advanced Computer Aided Drafting	3
DRFT 260	Survey of Civil & Architectural Drafting	3
MFG 115	Manufacturing Processes	5
MFG 130	Materials Science	5
TECH 100	Principles of Technology	5

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.

Revised May 2014 (effective Fall 2014)

Certificate of Proficiency (COP)**Computer Numerical Control**

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.php>

Certificate Requirements

- **Communications:**
5 credits - ENGL&110 Industrial Communications is recommended.
- **Health:**
3 credits – HLTH 100 Occupational Safety & Health.
- **Quantitative Skills:**
5 credits – MATH 106 Industrial Mathematics.
- **Human Relations/ Social Science:**
5 credits – BUS 144 Management of Human Relations is recommended.

Program Requirements

BLPT 150	Machinists Blueprint Reading	5
MASP 204	CNC Machining Center Fundamentals	3
MASP 205	CNC Turning Center Fundamentals	3
MASP 221	CNC Milling	10
MASP 222	CNC Turning	10
MFG 115	Manufacturing Processes	5
MFG 230	Computer Integrated Manufacturing	4
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop I (2-10 cr variable) for a combined total of 10 credits	10

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

Total credits required to earn this certificate: 68.

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 May 2015 (Effective Fall 2015)

Associate in Sciences - Transfer (AS-T)

Computer Science

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

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

Pre-Major Requirements

CS 170	Computer Programming	5
CS 270	Data Structures I	5
CS 275	Object-Orientated Prg in Java	5
CS 280	Advanced Data Structures	5
MATH& 153*	Calculus III	5
MATH 215	Discrete Structures	5
MATH 220	Linear Algebra	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

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

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

Total transferable credits required to earn this degree: 90 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.

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

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.

Revised July 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Criminal Justice

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

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

Recommended Electives

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 184	Administration of Justice	5
CJ 185	Community Policing	5
CJ 260	Physical Evidence/Criminalistics	5
CJ 286	Criminal Law Administration	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised June 2015 (effective Fall 2015)

Associate in Applied Science (AAS)

Criminal Justice

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

- **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 and Wellness.
- **Quantitative Skills:**
5 credits – MATH 098/099 Pre-College Math III OR MATH& 107 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.
- **Electives:**
9-11 credits. See advisor.

Program Requirements

BUS& 201	Business Law	5
CJ& 101*	Introduction to Criminal Justice	5
CJ& 110*	Criminal Law	5

CJ 154*	The American Legal System	5
CJ 180	Report Writing for Law Enforcement	5
CJ 184*	The Administration of Justice	5
CJ 260*	Physical Evidence & Criminalistics	5
CS 110	Introduction to Microcomputer Apps	3
POLS& 202	American Government	5
POLS 220	The Law and Social Issues	5

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

Total credits required to earn this degree: 94-96 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

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.

Revised June 2015 (effective Fall 2015)

Associate in Applied Sciences - Transfer (AAS-T)

Criminal Justice

for City University

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

- **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.
- **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.
- **Social Sciences:**

5 credits – CJ& 101.

- **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:**

23 credits. See advisor.

Program Requirements:

CJ 184*	The Administration of Justice	5
CJ 260*	Physical Evidence & Criminalistics	5
CJ 286	Criminal Law Administration	5
CJ 100	Intro to Information Systems	5

Cyber Forensic Investigator Pathway (recommended electives)

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

Justice Administration & Corporate Security & Investigation Pathways (recommended electives)

CJ& 110*	Criminal Law	5
CJ 154*	The American Legal System	5
CJ 180	Report Writing for Law Enforcement	5
POLS& 202	American Government	5
POLS 220	The Law and Social Issues	5

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

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

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.

Revised June 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Criminal Justice

for City University

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

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

Justice Administration & Corporate Security & Investigation Pathways

CJ& 110	Criminal Law	5
CJ 154	The American Legal System	5
CJ 180	Report Writing for Law Enforcement	5
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

Recommended Electives

CJ 184	Administration of Justice	5
CJ 260	Physical Evidence/Criminalistics	5
CJ 286	Criminal Law Administration	5
CS 100	Intro to Information Systems	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised June 2015 (effective Fall 2015)

Certificate of Proficiency (COP)

Diesel/Heavy Equipment Preventative Maintenance

The Diesel/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.

**Total credits required to earn this certificate: 60.*

Gainful Employment Program Disclosure Data: <http://lowercolumbia.edu/programs/gainful-employment.php>

Certificate Requirements

Communications:	5 credits – ENGL 099 (was ENGL 100), 110, ENGL& 101, 102, BUS 119, SPCH 110 or 114.
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.

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

Total credits required for 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.

Revised February 2016 (Effective Fall 2016)

Associate in Applied Science (AAS)

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.

**Total credits required to earn this degree: 125-131 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.*

Degree Requirements

- **Communications:**
5 credits – Choose from ENGL 099 (was ENGL 100), 110, ENGL& 101, 102, BUS 119, or SPCH 110 or 114. ENGL 110 Industrial Communications recommended.
- **Health:**
3 credits – HLTH 100 Occupational Safety and Health.
- **Quantitative Skills:**
5 credits – MATH 106
- **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.
- **Humanities/ Natural Science:**
5 credits – from the Distribution List for Professional/ Technical Degrees. TECH 100 Advanced Principles of Technology OR MFG 130 Materials Science 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.

- **Electives:**

2-8 credits - May be selected from the following courses to meet individual needs: DHET 228, MASP 107, WELD 105, WELD 151, WELD 152, WELD 221, BUS 150, CS 111.

Program Requirements

DHET 100*	Essentials of Mechanics	5
DHET 101	Electrical Systems I	5
DHET 102	Electrical Systems II	10
DHET 104	Vehicle Climate Control	8
DHET 111	Hydraulic Brakes	5
DHET 115	Air Brake Systems	5
DHET 125	Heavy Duty Chassis Maintenance	5
DHET 141	Hydraulics I	5
DHET 142	Hydraulics II	6
DHET 210	Diesel Engine Rebuild	16
DHET 215	Heavy Duty Engine Performance	15
DHET 220	Heavy Duty Power Trains	10
DHET 230	Advanced Shop Practices	5

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

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:

- 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 the following mechanical systems: Hydraulic, Electrical, Air and Hydraulic brakes, Engines, Power Transmission, Chassis, and Air Conditioning.

Revised May 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Drama

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

- **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.
- **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.
- **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:**
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 on the Distribution List for Transfer Degrees.

Recommended Electives

DRMA& 101	Introduction to Theatre:DIV	5
DRMA 106/7/8	Intro to Acting I, II, III	5 ea.
DRMA 206/7/8	Acting I, II, III	5 ea.
DRMA 116/7/8	Stage Crafts I, II, III	5 ea.
DRMA 119	Intro to Theatre Design & Tech	5
DRMA 196/7/8	Rehearsal & Performance I,II,III	5 ea.
DRMA 296/7/8	Rehearsal & performance IV,V,VI	5 ea.

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 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.

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

- Understand the complex nature of theatre both technical and artistic.

Revised May 2015 (Effective Fall 2014)

Associate in Applied Sciences - Transfer (AAS-T)

Early Childhood Education**for 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

- **Communications:**
10 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition II OR SPCH 110 Intro to Public Speaking.
- **Quantitative Skills:**
5 credits – College level Math course. See advisor for options.
- **Humanities:**
10 credits – Choose from: ART 206, 207, 208, 226, 227, 228, ENGL 204, 205, 234, 240, 245, 251, 252, 254, 256, 260, 270, HIST& 116, 126, HUM 110, 116, 117, 118, 164, 165, 166, 210, 230, or PHIL& 101. Foreign language courses not applicable to the Humanities requirement at Concordia U.
- **Natural Sciences:**
10 credits – from the Distribution List for Transfer Degrees. Must have one 5 credit class with lab.
- **Social Sciences:**
10 credits – PSYC& 100 General Psychology AND 5 credits of U.S. History or Sociology (SOC& 101) or PSYC& 200 or ECON 201.
- **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.
- **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.

Education Requirements 41-45 Credits

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health, Safety, Nutrition	5
ECED& 132	Infant/Toddler	3
ECED& 170	Environments	3
ECED& 180	Lang/Literacy Development	3
ECED 204	Music & Movement	3
ECED& 160	Curriculum Development	5
ECED 220	Arts & Crafts for Young Children	3
EDUC& 115	Child Development	5
EDUC& 130	Guiding Behavior	3
EDUC& 150	Child/Family/Community	3
EDUC& 203	Exceptional Child	3

Physical Education 3 Credits

PHED 105/205	Pilates/Yoga	1-2
PHED 106	Yoga for Beginners OR	13
PHED 152/252	Personalized Fitness	

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

Total credits required to earn this degree: 94-97 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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 problemsolving 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 multifaceted 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.

Revised May 2015 (Effective Fall 2015)

Associate in Applied Science (AAS)

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>

Degree Requirements

- **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& 107 Math in Society 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

ECED& 105	Intro Early Childhood Ed	5
ECED& 107	Health/Safety Nutrition	5
ECED& 120	Practicum/Nurturing Relationships	2
ECED& 160	Curriculum Development	5
ECED& 170	Environments f/Young Children	3
ECED& 180	Lang/Literacy Develop	3
ECED& 190	Observation/Assessment	3
ECED 204	Music and Movement	3
ECED 219	Math, Science, Computers	3
ECED 220	Arts and 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

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

Total credits required to earn this degree: 93 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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 problemsolving 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 multifaceted 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.

Revised July 2016 (Effective Fall 2016)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

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

- **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 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.
- **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:**
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 Electives

ECED& 100	Child Care Basics	3
ECED& 105	Intro to Early Childhood Ed	5
ECED& 160	Curriculum Development	5
EDUC& 130	Guiding Behavior	3
EDUC& 150	Child/Family/Community	3
EDUC& 203	Exceptional Child	3
EDUC& 205	Intro to Education w/Field Exp:DIV	5
EDUC 215	Classroom Management	3

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

Total transferable credits required to earn this degree: 90 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.

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 problemsolving 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 multifaceted 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.

Revised April 2014 (Effective Fall 2014)

Associate in Applied Sciences - Transfer (AAS-T)**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

- **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 – DRMA& 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 Sciences:**
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.

Program Requirements

	Child Development & Learning- Typical & Atypical	
ECED& 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

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

Total credits required to earn this degree: 100 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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

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 multifaceted 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.

Revised April 2014 (Effective Fall 2014)

Certificate of Proficiency (COP)**Early Childhood Education (State 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>

Gainful Employment Program Disclosure Data <http://lowercolumbia.edu/programs/gainful-employment.php>

Program Requirements

ECED& 105	Intro to Early Childhood Educ	5
ECED& 107	Health, Safety, and Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
ECED& 160	Curriculum	5
ECED& 180	Lang/Literacy Development	3
ECED& 190	Observation/Assessment	3
EDUC& 150	Child/Family/Community	3

Complete one of the following content areas:

EDUC& 130	Guiding Behavior (ECED Gen)	3
ECED& 132	Infants/Toddler Care (Inf/Tod Care)	3
EDUC& 136	School Age Care (School-Age Care)	3
ECED& 134	Family Child Care (Family Child Care)	3
ECED& 139	Admin Early Lrng Prog (Admin)	3

General Education Requirements

ENGL 100	College Ready English II or higher	5
MATH 107	College Level Math or higher	5
EDUC& 115	Child Development	5

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 problemsolving 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.

Revised January 2015 (Effective Fall 2015)

Certificate of Completion (COC)

Early Childhood Education (State Initial 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

ECED& 105	Intro to Early Childhood Educ.	5
ECED& 107	Health, Safety, and Nutrition	5
ECED& 120	Practicum	2

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.

Revised May 2014 (Effective Fall 2014)

Certificate of Specialization (COS)

Early Childhood Education (State Short Certificate) - Administration**About The Program**

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

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health/Safety/Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
EDUC& 115	Child Development	5
ECED& 139	Administration Early Learning Prog	3

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 (Effective Fall 2014)

Certificate of Specialization (COS)

Early Childhood Education (State Short Certificate) - 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>

Certificate Requirements

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health/Safety/Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
EDUC& 115	Child Development	5
ECED& 134	Family Child Care	3

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 (Effective Fall 2014)

Certificate of Specialization (COS)

Early Childhood Education (State Short Certificate) - General

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>

Certificate Requirements

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health/Safety/Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
EDUC& 115	Child Development	5
EDUC& 130	Guiding Behavior	3

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 (Effective Fall 2014)

Certificate of Specialization (COS)

Early Childhood Education (State Short Certificate) - Infants & 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>

Certificate Requirements

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health/Safety/Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
EDUC& 115	Child Development	5
ECED& 132	Infants/Toddler Care	3

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 (Effective Fall 2014)

Certificate of Specialization (COS)

Early Childhood Education (State Short Certificate) - 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>

Certificate Requirements

ECED& 105	Intro to Early Childhood Education	5
ECED& 107	Health/Safety/Nutrition	5
ECED& 120	Practicum-Nurturing Relationships	2
EDUC& 115	Child Development	5
EDUC& 136	School Age Care	3

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 January 2015 (Effective Fall 2015)

Certificate of Completion (COC)

Early Childhood Education - Infant/Toddler

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

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

ECED& 137	Infant/Toddler Hlthy Physical Dev	1
ECED& 138	Infant/Toddler Responsive Learning Environments	1
ECED& 100	Child Care Basics	3
ECED& 107	Health, Safety, and Nutrition	5
ECED& 105	Intro to Early Childhood Education	5
ECED& 132	Infants/Toddler Care	3
ECED 186	Social-Emotional Growth & Socialization	3
ECED 187	Cognitive & Language Development	3

ECED 188	Group Care for Infants/Toddlers	3
ECED& 190	Observation/Assessment	3
ECED 204	Music & Movement	3
ECED 220	Arts & Crafts	3
EDUC& 115	Child Development	5
EDUC& 130	Guiding Behavior	3

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.

Revised January 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Earth Sciences

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

- **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 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 Natural Sciences and/or Electives

ASTR& 101	Intro to Astronomy	5
BIOL 130	Biodiversity of Pacific Northwest	5
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
ERSI 104	Introduction to Earth Sciences	5
GEOL& 101	Intro to Physical Geology	5
GEOL 118	Historical Geology	5
OCEA& 101	Intro to Oceanography	5

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

Total transferable credits required to earn this degree: 90 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.

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

MATH& 141 and 142 are highly recommended.

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.

Revised May 2014 (Effective Fall 2014)

Associate in Sciences - Transfer (AS-T)

Earth Sciences

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

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

Pre-Major Requirements (50 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
ERSI 104	Intro to Earth Sciences	5
GEOL& 101	Intro Physical Geography	5
OCEA& 101	Intro to Oceanography OR	5
GEOL 118	Historical Geology	
MATH& 153*	Calculus III OR	5
MATH 210	Elements of Statistics	
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Recommended Electives

MATH& 141	Precalculus I	5
MATH& 142	Precalculus II	5
ASTR& 101	Intro to Astronomy	5
OCEA& 101	Intro to Oceanography	5

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

Total transferable credits required to earn this degree: 90 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.

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

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.

Revised September 2013 (Effective Fall 2013)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Economics

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

- **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.
- **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.
- **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.
- **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 Electives

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.

Total transferable credits required to earn this degree: 90 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.

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.

Revised May 2014 (Effective Fall 2014)

Elementary Education - AA-DTA (with Para Educator Certification)

Education-Elementary - AA/DTA (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

- **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 087/097 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.

- **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.

- **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.

- **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)

CS 110	Intro to Microcomputer Apps	3
EDUC 140	Education and the Law	3
EDUC 119	Curriculum and Instruction	2
EDUC& 203	Exceptional Child	3
EDUC& 205	Intro to Education w/Field Exp:DIV	5
EDUC 214	Instructional Strategies	3
EDUC 215	Classroom Management	3

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

Total transferable credits required to earn this degree: 92 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.

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.

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.

Revised July 2016 (Effective Fall 2016)

Associate in Arts - Direct Transfer Agreement (AA-DTA)**Education-Secondary**

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

- **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 Electives

EDUC& 114	Child Development	5
EDUC 140	Education and the Law	3
EDUC 119	Curriculum & Instruction	5
EDUC& 150	Child/Family/Community	3
EDUC& 205	Intro to Education w/Field Exp	5
EDUC 206	Course Org & Curriculum Dev	3
EDUC 214	Instructional Strategies	3
EDUC 215	Classroom Management	3
PSYC& 200	Lifespan Psychology	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised March 2015 (Effective Fall 2015)

AS-T in EET/CET/MRP

Electronics Engineering & Computer Engineering Technology

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

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative/Symbolic Reasoning Skills:**
15 credits – MATH& 151* Calculus I AND MATH& 152* Calculus II AND MATH& 153* Calculus III OR MATH 210 Elements of Statistics.
- **Humanities/ Social Sciences:**
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.
- **Electives:**
4 credits minimum – select electives appropriate for your intended major and intended baccalaureate institution. MATH& 153 Calculus III or MATH 210 Elements of Statistics may count as electives.

Pre-Major Requirements

CHEM& 161*	General Chemistry w/Lab I	5
CS 170	Computer Programming	5
CS 270	Data Structures I	5
CS 281	Digital Design	5
ENGL& 235	Technical Writing	6
ENGR& 204	Electrical Circuits	5
• PHYS& 114*	General Physics I w/Lab	5
• PHYS& 115*	General Physics II w/Lab	5
• PHYS& 116*	General Physics III w/Lab	5

OR		
• PHYS& 221*	Engr Physics I w/Lab	5
• PHYS& 222*	Engr Physics II w/Lab	5
• PHYS& 223* (engineering physics preferred)	Engr Physics III w/Lab	5
SPCH 110	Intro to Public Speaking	5

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

Total transferable credits required to earn this degree: 90 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.

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

Revised July 2012 (Effective Fall 2012)

Elementary Education - AA-DTA

Elementary Education

for City U

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

- **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 III 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.
- **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.
- **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 PSYC& 200 AND HIST& 126, 127, 128, 136 OR 137 AND 5 more credits from a different 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.

Total transferable credits required to earn this degree: 90 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.

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.

Revised June 2013 (Effective Fall 2013)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Elementary Education

for WSU Vancouver

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

- **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.
- **Natural Sciences:**

20+ credits – Students must take four science classes as follows: one Life Science AND one Physical Science AND one Natural Science with lab AND one Natural Science. Courses shall be from three different disciplines. BIOL& 100 is strongly recommended. Only the following science classes can transfer to WSU-V College of Education: Physical Science classes: ASTR& 101, CHEM& 110, 121, 131, 161, 162, 163, ERSI 104 or 105, ERSI 109, GEOG 105, GEOL 105, 118, GEOL& 208, NUTR& 101, OCEA& 101, PHSC 109, PHYS& 100, PHYS& 114, 115, 116, and PHYS 210. Life Science classes: ANTH& 205, BIOL& 100, BIOL& 160, 211, 212, 213, 241, 242, BIOL 150. Lab courses/minimum 5 credits.

- **Social Sciences:**

20+ credits – select courses from 3 different disciplines from the following list: PSYC& 100, 200, ECON 105, ECON& 201, 202, HIST& 137, POLS& 202.

- **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.

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised April 2013 (Effective Fall 2013)

Associate in Sciences - Transfer (AS-T)

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

- **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:**

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

• **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.

Pre-Major Requirements (30 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CS 270	Data Structures I	5
MATH& 153*	Calculus III	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Recommended Electives

BIOL& 211	Majors Biology Cellular	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
ENGL& 235	Technical Writing	5
ENGR& 121*	Engineering Graphics I	1-3
ENGR& 122*	Engineering Graphics II	1-3
ENGR& 123*	Engineering Graphics III	1-3
MATH 220	Linear Algebra	5
MATH 240	Differential Equations	5

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

Total transferable credits required to earn this degree: 90 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.

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 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)**English**

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

- **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.
- **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.
- **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 Electives

ENGL 108	Introduction to Literature	5
ENGL 140	Intro to Women Writers:DIV	5
ENGL 231	Creative Writing	5
ENGL 232	Creative Writing	5
ENGL 233	Creative Writing	5
ENGL 245	Contemporary Literature:DIV	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised May 2014 (Effective Fall 2014)

Associate in Sciences - Transfer (AS-T)

Environmental Science

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

- **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: ENVS 150 – Environment and Society:DIV.
- **Electives:**
15 credits - These remaining credits must include program advisor approved credits.

Pre-Major Requirements (45 credits)

BIOL& 211*	Majors Biology Cellular	5
BIOL& 212*	Majors Biology Animal	5
BIOL& 213*	Majors Biology Plant	5
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
ENVS 150	Environment and Society	5
ENVS 215	Environmental Issues	5
MATH& 153*	Calculus III OR	5
MATH 210	Elements of Statistics	

Recommended Electives

BIOL 130	Biodiversity of the Pacific Northwest	5
BIOL& 260	Microbiology	5
GEOG 105	Physical Geography	5
GEOL 118	Historical Geology	5
GEOL& 208	Geology of Pacific Northwest	5
OCEA& 101	Intro to Oceanography	5

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

Total transferable credits required to earn this degree: 90 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.

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

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.

Revised March 2012 (Effective Fall 2012)

Certificate of Completion (COC)

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

FISC 105	Fire Prevention	3
FISC 110	Fire Science I	3
FISC 206	Hazardous Materials	3
FISC 210	Bldg. Construction/Fire Protection	3
FISC 215	Fixed Systems & Extinguishers	3
FISC 288/289	Cooperative Education	3

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

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.

Revised March 2012 (Effective Fall 2012)

Certificate of Completion (COC)

Fire Investigator

for

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

FISC 110	Fire Science I	3
FISC 205	Fire Invest. & Cause Determination	3
FISC 206	Hazardous Materials	3
FISC 210	Bldg. Construction/Fire Protection	3
FISC 288/289	Cooperative Education	3

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

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.

Revised March 2012 (Effective Fall 2012)

Certificate of Proficiency (COP) Certificate of Completion (COC)

Fire Prevention Specialist

for

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.php>

Certificate Requirements

- **Communications:**
10 credits - ENGL& 101 English Composition I AND SPCH 110 Intro to Public Speaking.
- **Quantitative Skills:**
5 credits – MATH 106 Industrial Mathematics.
- **Human Relations/ Social Science:**
5 credits – BUS 144 Management of Human Relations.

Program Requirements

FISC 101	Introduction to Fire Protection	3
FISC 105	Fundamentals of Fire Prevention	3
FISC 110	Fire Science I	3
FISC 205	Fire Invgn/Cause Determination	3
FISC 206	Hazardous Materials	3
FISC 210	Building Constr for Fire Protection	3
FISC 215	Fixed Systems & Extinguishers	3
FISC 288	Cooperative Education	8
FISC 289	Coop Education Seminar	1

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

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.

Revised May 2015 (Effective Fall 2015)

Certificate of Completion (COC)

Fire Science 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

FISC 101	Intro to Fire Protection	3
FISC 105	Fire Prevention	3
FISC 110	Fire Science I	3
FISC 288/289	Cooperative Education	3

SPCH 110	Intro to Public Speaking	5
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Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

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.

Revised March 2012 (Effective Fall 2012)

Associate in Applied Science (AAS)

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

- **Communications:**
5 credits - ENGL& 101 English Composition I OR ENGL 110 Industrial Communication.
- **Quantitative Skills:**
5 credits – MATH 105 Math for Health Sciences.
- **Human Relations/ Social Science/ Diversity:**
5 credits – BUS 144 Management of Human Relations:DIV.
- **Health:**
3 credits – HLTH 100 Occupational Safety and Health.
- **Natural Sciences:**
5 credits – CHEM& 100 Preparatory Chemistry OR PHYS& 100 Physics: Non-Science Majors.

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

Program Requirements

FISC 101	Introduction to Fire Protection	3
FISC 105	Fundamentals of Fire Prevention	3
FISC 109	Fire Service Safety	3
FISC 110	Fire Science I	3
FISC 111	Basic Fire Fighting Skills	10
FISC 170	Emergency Medical Technician I	8
FISC 125	Fire Service Rescue	5
FISC 205	Fire Invgtn/Cause Determination	3
FISC 206	Hazardous Materials	3
FISC 207	Fire App. & Pumping Equipment	4
FISC 210	Building Constr for Fire Protection	3

FISC 215	Fixed Systems & Extinguishers	3
FISC 255	Fire Fighting Tactics and Strategy	3
FISC 288	Cooperative Education	14
FISC 289	Coop Education Seminar	1
MEDA 101 or BTEC 181	Medical Terminology I	3

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: 95 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Revised February 2016-Effective Fall 2016

Certificate of Completion (COC)

Fitness Specialist

Provides the content and experience for students to acquire a firm foundation for a career as a personal trainer or group exercise instructor working within athletic clubs, starting their own business, or working with community health and fitness organizations. This certificate can be taken independently, or in conjunction with a DTA program as part of a two-year preparation to transfer to a four-year university. With the completion of this program, students will be set up to take the NCAA-accredited Personal Trainer Exam and/or Group Exercise Exam through the American Council on Exercise (ACE) to become a certified personal trainer and/or group exercise instructor.

Program Requirements

HLTH 105	First Aid and CPR	1
PHED 285	Fitness Marketing	3
HLTH 245	Health and Exercise Behavior Change	3
HLTH 135 - OR NUTR& 101	Food and Fitness - OR Nutrition	2 5
BIOL 179	Human Biology and Exercise	5
PHED 288	Cooperative Education (Internship)	1
PHED 289	Employment Portfolio	1
PHED 295 - AND/OR PHED 296	Personal Training Instruction - AND/ OR Group Fitness Instructor Course	3

Recommended Electives

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HLTH 106	Health and Wellness	2
PHED 171	Prevention and Care of Athletic Injuries	3
	PHED Activity Courses	

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

Total credits required to earn this degree: 19 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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

- Apply knowledge of human anatomy, exercise physiology, kinesiology and nutrition to prescribing fitness programs specific to individual needs.
- Understand the basics of marketing and motivational approaches to reaching potential clients.
- Design and successfully lead individuals, small groups, and classes in fitness instruction while addressing all components of fitness.

Created December 2015 (Effective Spring 2016)

Certificate of Completion (COC)

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.

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

Certificate Requirements

HLTH 100	Occupational Safety and Health or	3
MFG 105	Industrial Safety	
MFG 115	Manufacturing Processes	5
16-20 credits from the following list:		
MATH 078/079	Pre-College Math I or higher	5
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop (2-10 cr variable) for a combined total of 10 credits	10
MFG 120	Quality Assurance	4
MFG 140	Industrial Hydraulics	4
MFG 205	Work Teams in Industry	3

PMFG 110	Industrial Maintenance	5
WELD 105	Related Welding I	6

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

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.

Revised January 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

General AA-DTA

Earn a degree completely online at Lower Columbia College! If you need to fit classes in to your busy home or work life, or don't live near Lower Columbia College, our ONLINE degree program may be the option for you.

Not all online courses are taught every quarter. View the online quarterly schedule to find the online/distance ed courses for the quarter. (Select current or upcoming Class Schedule. Click on "D" or "O", and then click on ONLINE to view only online classes.)

Degree Requirements

- **Communications:**
15 credits - ENGLISH 101 and ENGLISH 102. Choose one from SPEECH 110 or SPEECH 114.
- **Quantitative Skills:**
5 credits – Intermediate Algebra Proficiency required. Choose one of the following: MATH& 107 or higher with the exception of MATH& 131
- **Humanities:**
15 credits – Select from at least three disciplines from the following: 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 (indicated by *): ART 100, 101*, 102*, 103*, 106*, 107*, 108*, 111*, 112*, 113*, 154*, 155*, 156*, 157*, 158*, 206, 207, 208, 226, 227, 228, 241*, 242*, 243*, AMERICAN SIGN LANGUAGE 121, 122, 123, CHINESE 121, 122, 123, DANCE 100*, 105*, 110*, 151*, 152*, 153*, 251*, 252*, 253*, DRAMA 101, 106*, 107*, 108*, ENGLISH 108, 124*, 125*, 126*, 140, 204, 205, 224*, 225*, 226*, 231, 232, 233, 234, 235, 244, 245, 246, 251, 252, 254, 256, 260, 270, 280, HISTORY 116, 126, HUMANITIES 104, 107, 116, 117, 118, 164, 210, 220, 230, MUSIC 100, 101, 102, 103, 105, 117, 119, 130*, 134*, 135*, 141*, 142*, 143*, 145, 150*, 151*, 152*, 153*, 176*, 177*, 178*, 209, 241*, 242*, 243*, 251*, 252*, 253*, 276*, 277*, 278*, PHILOSOPHY 101, 210, 260, SPANISH 110, 114, 121, 122, 123, 221, 222, 223, SPEECH 104, 109, 110, 114, 209
- **Social Science:**
15 credits – ANTHROPOLOGY 109, 206, BUSINESS 101, 201, CHEMICAL DEPENDENCY 101, CRIMINAL JUSTICE 101, ECONOMICS 104, 105, 201, 202, HISTORY 117, 127, 128, 136, 137, 205, 214, 215, 254, POLITICAL SCIENCE 101, 202, 203, 204, PSYCHOLOGY 100, 200, 204, 214, 220, SOCIOLOGY 101, 210, 225
- **Natural Science:**

15 credits – Select from at least three disciplines including: One five credit course with lab (indicated by *). 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: PHYSICAL SCIENCES: CHEMISTRY 110**, 121**, 131**, 161**, 162**, 163**, 231**, 261**, 262**, 263**, PHYSICS 100**, 114**, 115**, 116**, 210, 221**, 222**, 223**, PHYSICAL SCIENCE 108**, 109**, BIOLOGICAL SCIENCES: ANTHROPOLOGY 205, BIOLOGY 100**, 109**, 130**, 150**, 160**, 170, 211**, 212**, 213**, 241**, 242**, 260**, NUTR& 101 (was CHEM 120), EARTH SCIENCES: ASTRONOMY 101**, EARTH SCIENCE 104**, 105**, 109**, ENVIRONMENTAL SCIENCE 150, 215**, GEOGRAPHY 105**, GEOLOGY 101**, 105**, 118**, 208**, OCEANOGRAPHY 101**, GENERAL SCIENCES: BUSINESS 206, 207, ENGINEERING 106, 210, MATH 107, 125, 132, 141, 142, 148, 151, 152, 153, 210, 211, 220, 240, 254

- **Electives:**

25 credits – See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List. See Distribution List for Transfer Degrees for Restricted Course List.

- **Diversity:**

5 credits – Courses that meet this requirement may also be used toward other graduation requirements. The following courses meet the Diversity requirement: AMERICAN SIGN LANGUAGE 123, ANTHROPOLOGY 109, 206, ART 100, 206, 207, 208, 228, BUSINESS 144, CHINESE 121, 122, 123, EDUCATION 205, ENGLISH 140, 246, 280, ENVIRONMENTAL SCIENCE 150, HISTORY 126, 127, 128, 205, 215, HUMANITIES 164, 210, MUSIC 117, 119, 209, SOCIOLOGY 101, 225, SPANISH 121, 122, 123, SPEECH 109, 209

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

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

Important Requirements

- A course cannot be credited toward more than one distribution or skill area, except Diversity courses.
- Cross listed courses can count only once for credit (example: BUS 206 is same as MATH 210 and may only be counted as BUS or MATH). Check course catalog or meet with an advisor.
- “Pass” grade not allowed for the Communications, Quantitative Skills, Humanities, Social Sciences, Natural Sciences, or Diversity requirements. Check with your intended transfer university for minimum grade requirements.
- Degree planning is based on information available at the time of preparation. It is the student’s responsibility to meet with their LCC advisor and with an advisor at the college to which they plan to transfer for specific requirements. Consult the LCC catalog for LCC graduation requirements.
- Most four-year universities require one year of a single foreign language as a graduation requirement
- Courses listed below are subject to change; see the online College Catalog and/or College Catalog Addendum.

Associate in Arts - Direct Transfer Agreement (AA-DTA)

General AA-DTA Online

Earn a degree completely online at Lower Columbia College! If you need to fit classes in to your busy home or work life, or don’t live near Lower Columbia College, our ONLINE degree program may be the option for you.

Not all online courses are taught every quarter. View the online quarterly schedule to find the online/distance ed courses for the quarter. (Select current or upcoming Class Schedule. Click on “D” or “O”, and then click on ONLINE to view only online classes.)

Degree Requirements

- **Communications:**

15 credits - ENGLISH 101 and ENGLISH 102 and SPEECH 110

- **Quantitative Skills:**

5 credits – Intermediate Algebra Proficiency required. Choose one of the following: MATH& 107 or higher with the exception of MATH& 131

- **Humanities:**

15 credits – Select from at least three disciplines from the following: 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

(indicated by *): ART 100, 226, 227, 228, ENGLISH 204, 246, 252, 260, 270, 280, HUMANITIES 104, 116, 117, 118, 230, MUSIC 105, 117, 119, 209, SPANISH 121, 122, 123, 221, 222, 223, SPEECH 110

- **Social Science:**

15 credits – Select from at least three disciplines from the following: No more than 10 credits in any one discipline: BUSINESS 101, 201, ECONOMICS 105, 201, 202, HISTORY 127, 136, 137, 254, POLITICAL SCIENCE 202, PSYCHOLOGY 100, 200

- **Natural Science:**

Select from at least three disciplines including: One five credit course with lab (indicated by *). 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: CHEMISTRY 110**, 121**, BIOLOGY 100**, 160**, 241**, 242**, 260**, NUTR& 101, EARTH SCIENCE 105**, ENVIRONMENTAL SCIENCE 150, GEOLOGY 208**, OCEANOGRAPHY 101**, BUSINESS 206, MATH 107, 210

- **Electives:**

See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List. See Distribution List for Transfer Degrees for Restricted Course List.

- **Diversity:**

Courses that meet this requirement may also be used toward other graduation requirements. The following courses meet the Diversity requirement: ART 100, BUSINESS 144, ENGLISH 280, HISTORY 127, MUSIC 117, 119, 209, SOCIOLOGY 101, SPANISH 121, 122, 123,

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

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

Important Requirements

- A course cannot be credited toward more than one distribution or skill area, except Diversity courses.
- Cross listed courses can count only once for credit (example: BUS 206 is same as MATH 210 and may only be counted as BUS or MATH). Check course catalog or meet with an advisor.
- “Pass” grade not allowed for the Communications, Quantitative Skills, Humanities, Social Sciences, Natural Sciences, or Diversity requirements. Check with your intended transfer university for minimum grade requirements.
- Degree planning is based on information available at the time of preparation. It is the student’s responsibility to meet with their LCC advisor and with an advisor at the college to which they plan to transfer for specific requirements. Consult the LCC catalog for LCC graduation requirements.
- Most four-year universities require one year of a single foreign language as a graduation requirement
- Courses listed below are subject to change; see the online College Catalog and/or College Catalog Addendum.

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **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.

Program Requirements

ACCT 101	Intro to Accounting Concepts	5
BTEC 146	PowerPoint Fundamentals	1
BTEC 149	Internet Fundamentals	1
BUS& 101	Introduction to Business	5
BUS 150	Customer Service/Management	5
BUS 165	Salesmanship	5
CS 110	Intro to Microcomputer Apps	3
CS 121	Intro to Spreadsheets	5

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 office administration procedures and techniques.
- Proficiency in using basic workplace computer applications.

Revised January 2015 (Effective Winter 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Geography

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

- **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.
- **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.
- **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: 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 Electives

ANTH& 206	Cultural Anthropology:DIV	5
BIOL 130	Biodiversity of the Pacific NW	5
CS 110	Intro to Microcomputer Applications	3
ENVS 150	Environment and Society:DIV	5
GEOG 105	Physical Geography	5
GEOL& 101	Intro Physical Geology	5
GEOL& 208	Geology of the Pacific Northwest	5
MATH 210	Elements of Statistics	5
OCEA& 101	Introduction to Oceanography	5
SOC& 101	Introduction to Sociology:DIV	5
SPAN& 121	Spanish I:DIV	5

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

Total transferable credits required to earn this degree: 90 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.

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.

Revised May 2014 (Effective Fall 2014)

Associate in Sciences - Transfer (AS-T)

Geology

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

- **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 Science:**

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.

• **Electives:**

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

Pre-Major Requirements (40 credits)

CHEM& 161*	General Chem w/Lab I	5
CHEM& 162*	General Chem w/Lab II	5
CHEM& 163*	General Chem w/Lab III	5
GEOL 118	Historical Geology	5
MATH& 153*	Calculus III OR	5
MATH 210	Statistics	
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Recommended Electives

ERSI 104	Introduction to Earth Sciences	5
GEOL& 208	Geology of Pacific NW	5
OCEA& 101	Introduction to Oceanography	5

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

Total transferable credits required to earn this degree: 90 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.

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

MATH 112 through MATH 150 are highly recommended.

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.

Revised July 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)**Geology**

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

- **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.
- **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.
- **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: 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 Electives

ASTR& 101	Introduction to Astronomy	5
BIOL 130	Biodiversity of Pacific Northwest	5
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5
ERSI 104	Introduction to Earth Sciences	5
GEOL& 101	Intro Physical Geology	5
OCEA& 101	Introduction to Oceanography	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 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.

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

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.

Revised May 2014 (Effective Fall 2014)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Health & Fitness

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

- **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 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 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 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.
- **Social Sciences**:**
15 credits – Selected from at least three disciplines on 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.
- **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. No more than 3 PE activity courses may be taken as electives. PE activity courses are marked with an *.

Recommended Electives

HLTH 105	First Aid/CPR/BBP	1
HLTH 106	Health Today	2
HLTH 110	Personal Health	2
NUTR& 101	Nutrition	5
*PHED 104/204	Pilates and Stretch	1-2
*PHED 105/205	Pilates and Yoga	1-2

*PHED 110/210	Circuit Training	2-4
*PHED 120/220	Cross Training	2-4
*PHED 125	Boot Camp	1
*PHED 127/227	Zumba	1-2
*PHED 128/228	Weight Training	2-4
*PHED 130/230	Swimming	1-2
*PHED 139	Train for a Race	1
*PHED 152/252	Personalized Fitness	2
PHED 171	Prevention & Care-Athletic Injuries	3
PHED 284	Lifeguard Training	3

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 in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0.

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

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

- 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.
- 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.

Revised February 2015 (Effective Fall 2015)

Certificate of Completion (COC)

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.

Program Requirements

AH 100	Bloodborne Pathogens and Infection Control	1
HLTH 100	Occupational Safety and Health	3
AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2
MEDA 101	Medical Vocabulary I	3

If no previous healthcare work experience, may include:

AH 288	Co-op Work Experience	1
AH 289	Employment Portfolio Seminar	1

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.

Revised December 2014 (effective Winter 2015)

Certificate of Completion (COC)

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

BTEC 145	Intro to MS Word	5
BTEC 148	Intro to Outlook	2
BUS 150	Customer Service/Management	5

Total credits required to earn this certificate: 12

Some courses have prerequisites; see catalog descriptions and CS advisor.

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.

Revised March 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

History

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

- **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.
- **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.
- **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.
- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

HIST& 126	World Civilizations I	5
HIST& 127	World Civilizations II	5
HIST& 128	World Civilizations III	5
HIST& 136	U.S. History 1	5
HIST& 137	U.S. History 2	5
HIST& 215	Women in U.S. History:DIV	5
HIST 254	History of WA & Pacific NW	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 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.

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.

Revised May 2014 (Effective Fall 2014)

Certificate of Proficiency (COP)

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, 360.442.2334, to ensure courses meet program requirements.

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

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:

Certificate Requirements

- **Communications:**
5 credits - ENGL 099 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 PreCollege 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).
- **Program Requirements:**
See ICP advisor for a list of required program courses.

Additional Requirements

HLTH 100	Occupational Safety & Health	3
ICP 288	Cooperative Work Experience	3-17
ICP 289	Employment Portfolio	1
ICP 291	ICP Seminar	2

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

Minimum credits required to earn this certificate: 45. Remedial courses (numbered under 100) except for Math, do not count toward the 45 credits needed for the certificate.

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

Revised August 2015 (Effective Fall 2015)

Associate in Applied Sciences - Transfer (AAS-T)

Information Technology Systems

for City University

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

- **Communications:**
10 credits - ENGL& 101 English Composition I and ENGL& 102 English Composition II
- **Quantitative Skills:**
5 credits – MATH 125 Finite Math
- **Humanities:**
5 credits - from the Distribution List for Professional/ Technical Degrees for Humanities classes that meet this requirement.
- **Social Sciences:**
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.

Program Requirements

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 Applications	5
CS 141	PC Technician I	5
CS 142	PC Technician II	5
CS 170	Fundamentals of Computer Programming	5
CS 208	Intro to Management Information Systems	5
CS 211	Networking Basics	5
CS 230	Database Development	5
CS 260	Intro to Network Security	5
CS 270	Data Structures I	5
CS 280	Advanced Date Structures	5

NOTE: Some courses have prerequisites, check catalog descriptions.

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

Total credits required to earn this degree: 95 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Created May 2014 (Effective Fall 2014)

Associate in Applied Sciences - Transfer (AAS-T)

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

- **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.
- **Electives:**
25 credits minimum. Complete any two Certificate requirements listed below.

Program Requirements

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

Recommended Electives

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	
CS 230	Database Development	5
	Total Credits:	13

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

Total credits required to earn this degree: 92-100 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.

Revised May 2015 (Effective Fall 2015)

Associate in Applied Science (AAS)

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.

NOTE: Some courses have prerequisites, check catalog description.

Degree Requirements

- **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.
- **Electives:**
25 credits minimum. Complete any two Certificate requirements listed below.

Program Requirements

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 System	5
CS 211	Networking Basics	5
CS 260	Intro to Network Security	5
CS 288/289	Cooperative Education	2

Recommended Electives

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 <i>OR</i>	5
CS 275	Object-Oriented Prog. in Java	
CS 230	Database Development	5
Total Credits:		13

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

Total credits required to earn this degree: 92-100 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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.
- 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.

Revised May 2015 (Effective Fall 2015)

Associate in Nursing - Direct Transfer Agreement (AN-DTA/MRP)

LPN2RN-eLearning

This degree prepares students for licensure and employment as a registered nurse, as well as for continuing nursing education for a baccalaureate degree in nursing. Students who complete this degree and pass the registered nurse license exam (NCLEX-RN) may enter participating Bachelor of Science in Nursing programs in Washington State as seniors. The Nursing Program is approved by the Washington State Nursing Care Quality Assurance Commission and

accredited by the Accreditation Commission for Education in Nursing. Provides same course content as the traditional program but in online delivery method.

Degree Requirements

- **Communications:**
10 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition II OR SPCH 110 Intro to Public Speaking.
- **Quantitative Skills:**
5 credits – MATH 210 Elements of Statistics
- **Humanities:**
15 credits – *HUM 255: Ethics and Policy in Healthcare (5 cr) (taken after admission to Nursing Program); 10 credits selected from at least two 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. Five of these credits must also meet the DIV requirement.
- **Natural Sciences:**
30 credits – BIOL& 160, BIOL& 241, BIOL& 242, BIOL& 260, CHEM& 121, NUTR& 101
- **Social Sciences:**
15 credits – PSYC& 100 General Psychology; PSYC& 200 Lifespan Psychology; *PSYC 255 Psychosocial Issues in Healthcare (5 cr) (taken after admission to Nursing Program)
- **Diversity:**
5 credits. Must be met by a course on both the Humanities distribution list and the DIV course list.
- **Electives:**
Fulfilled by 15 credits of the Nursing courses

Nursing Courses

NURS 241	Essential Concepts of Nursing Practice	2
NURS 242	Nursing throughout the Lifespan	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
	Total Credits	30

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

Total credits required to earn this degree: 135

*Note: Admission to the nursing program is required for all NURS courses, as well as **HUM 255 and PSYC 255**.

Admission is competitive. ENGL& 101, MATH 210, PSYC& 100, PSYC& 200, BIOL& 160, BIOL& 241, BIOL& 242, BIOL& 260, and CHEM& 121 must be completed or in process to apply. It is recommended that the communications courses, NUTR& 101, and the 10 credits of humanities (5 of which must be DIV) be completed prior to beginning the nursing coursework. To be considered for admission to the LPN2RN level of the Nursing program, the student must have graduated from a state board approved PN program and hold a PN license. Accepted PN license is equivalent to **30 credits** (NURS 150, 151, 160, 161, 152, 162, 153, 163). You must have a current, unencumbered LPN license to enter this program and have documented 1000 hours work experience as an LPN within the last five years.

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

- Demonstrate critical thinking by applying objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions in nursing practice.

- Demonstrate competence in basic nursing knowledge and skills in the performance of the nursing roles as provider of care, manager of care, and member of the profession.
- Communicate effectively in professional nursing practice.
- Process and utilize quantitative data in professional nursing practice.
- Incorporate professional interpersonal skills and caring behaviors in nursing practice.
- Recognize the importance of life-long learning to success in the profession of nursing.

Effective July 01, 2017

Associate in Applied Science (AAS)

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

- **Communications:**
5 credits - ENGL& 110 Industrial Communications is recommended.
- **Health:**
3 credits – HLTH 100 Occupational Safety & Health.
- **Quantitative Skills:**
5 credits – MATH 106 Industrial Mathematics.
- **Human Relations/ Social Science:**
5 credits – BUS 144 Management of Human Relations is recommended.
- **Humanities/ Natural Science:**
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	5
MASP 112	Machine Shop II	10
MASP 113	Machine Shop III	10
MASP 204	CNC Machining Center Fundamentals	3
MASP 205	CNC Turning Center Fundamentals	3
MASP 221	CNC Milling	10
MASP 222	CNC Turning	10
MASP 223	Advanced CNC Processes	6
MFG 115	Manufacturing Processes	5
MFG 230	Computer Integrated Manufacturing	4
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop I (2-10 cr variable) for a combined total of 10 credits	10

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

Total credits required to earn this degree: 99 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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 May 2015 (Effective Fall 2015)

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **Communications:**
5 credits - ENGL& 110 Industrial Communications is recommended.
- **Health:**
3 credits – HLTH 100 Occupational Safety & Health.
- **Quantitative Skills:**
5 credits – MATH 106 Industrial Mathematics.
- **Human Relations/ Social Sciences:**
5 credits – BUS 144 Management of Human Relations is recommended.

Program Requirements

BLPT 150	Machinists Blueprint Reading	5
MASP 112	Machine Shop II	10
MASP 113	Machine Shop III	10
MASP 114	Machine Shop IV	10
MFG 115	Manufacturing Processes	5
WELD 152	Intro to Arc Welding	6
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop I (2-10 cr variable) for a combined total of 10 credits	10

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

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.

Revised May 2015 (Effective Fall 2015)

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **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 106 Industrial Mathematics.
- **Human Relations/ Social Science:**
5 credits – BUS 144 Management of Human Relations.

Program Requirements

BLPT 150	Machinists Blueprint Reading OR	5
BLPT 160	Blueprint Reading for Welders	
MASP 107 AND/OR MASP 111	Machining for Related Occupations (2-6 cr variable) Machine Shop (2-10 cr variable) for a combined total of 10 credits	10
MFG 115	Manufacturing Processes	5
WELD 105	Related Welding I	6
Take one of the following courses:		
DRFT 107	Technical Graphics	3
MFG 130	Materials Science	5

MFG 230	Computer Integrated Manf.	4
TECH 100	Advanced Principles of Tech	5
WELD 158	Welding Theory/Fabrication	5

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

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.

Revised May 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Math

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

- **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.
- **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.
- **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 Electives

MATH& 151*	Calculus I	5
MATH& 152*	Calculus II	5
MATH& 153*	Calculus III	5
MATH& 254*	Calculus IV (was MATH 154)	5
MATH 210	Elements of Statistics	5
MATH 215	Discrete Structures	5
MATH 220	Linear Algebra	5
MATH 240	Differential Equations	5

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

Total transferable credits required to earn this degree: 90 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.

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

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.

Revised May 2014 (Effective Fall 2014)

Associate in Math Education - DTA/MRP

Math Education

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

- **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 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:**
15-20 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.
- **Social Sciences:**

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.

- **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

EDUC& 205	Intro to Education with Field Exp.	5
MATH& 153*	Calculus III	5
MATH& 254*	Calculus IV (was MATH 154)	5
MATH 220	Linear Algebra	5

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

Total transferable credits required to earn this degree: 90 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.

If additional credits are required, the remainder shall be fully transferable as defined by the receiving institution.

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

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.

Revised March 2013 (Effective Fall 2013)

AS-T in MET/MRP

Mechanical Engineering Technology

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

- **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 Sciences:**
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

- **Electives:**

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

Pre-Major Requirements(36 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CS 170	Fundamentals of Computer Program	5
ENGL& 235	Technical Writing	5
ENGR& 121*	Engineering Graphics I	3
ENGR& 122*	Engineering Graphics II	3
AND		
PHYS& 114*	• General Physics I w/Lab	5
PHYS& 115*	• General Physics II w/Lab	5
PHYS& 116*	• General Physics III w/Lab	5
OR		
PHYS& 221*	• Engr Physics I w/Lab	5
PHYS& 222*	• Engr Physics II w/Lab	5
PHYS& 223*	• Engr Physics III w/Lab	5

Electives

ECON& 201	Micro Economics	5
ECON& 202	Macro Economics	5
ENGR& 123*	Engineering Graphics III	5
ENGR& 214	Statics	5
ENGR& 215	Dynamics	5
ENGR& 225	Mechanics of Materials	5
MATH& 153*	Calculus III OR	5
MATH 210	Elements of Statistics	
SPCH 110	Intro to Public Speaking	5

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

(Physics 221, 222, 223 preferred)

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

Total transferable credits required to earn this degree: 91 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.

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 2012 (Effective Fall 2012)

AS-T Other Engineer/MRP

Mechanical/ Civil/ Aeronautical/ Industrial/ Materials Science Engineering

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

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

Pre-Major Requirements(40 credits)

CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
ENGR& 214	Statics	5
ENGR& 215	Dynamics	5
ENGR& 225	Mechanics of Materials	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

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

Electives

CS 170	Computer Programming	5
CHEM& 163*	General Chemistry w/Lab III	5
ENGL& 235	Technical Writing	5
ENGR& 106	Engineering Problems	5

ENGR& 121*	Engineering Graphics I	1-3
ENGR& 122*	Engineering Graphics II	1-3
ENGR& 123*	Engineering Graphics III	1-3
ENGR& 204	Electrical Circuits	6
ENGR& 224	Thermodynamics	5
MATH& 254* (was MATH 154)	Calculus IV	5

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

Total transferable credits required to earn this degree: 90 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.

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 November 2014 (Effective Fall 2015)

Certificate of Proficiency (COP)

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://lowercolumbia.edu/programs/gainful-employment.php>

Certificate Requirements

- **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:**
Preparatory for State – mandated credentialing exam: MEDA 205 – Certification Review for Medical Assisting.

Program Requirements

AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2

BTEC 145	Intro to Word OR	5
CS 110	Intro to Microcomputer Apps	3
BTEC 171	Medical Reception Procedures	3
BTEC 172	Medical Office Procedure	3
BTEC 173	Computers in the Medical Office	3
MEDA 101	Medical Vocabulary I OR	3
BTEC 181	Medical Terminology I	
MEDA 102	Medical Vocabulary II OR	3
BTEC 182	Medical Terminology II	
MEDA 120	Survey of Human A & P	5
MEDA 122	Law & Ethics for the Medical Office	3
MEDA 145	Medical Lab Procedures	6
MEDA 161	Exam Room Procedures I	4
MEDA 162	Exam Room Procedures II	4
MEDA 165	Meds in MEDA & Diseases	5
MEDA 190	MEDA to Preceptorship	5
MEDA 195	Medical Assisting Seminar	1

Total credits required to earn this certificate: 69-72. For any course to count toward this certificate, a grade of C or better is required.

NOTE: MATH 105, AH 104, 114, and BTEC 145 or CS 110 all with a grade of C or better must be completed before summer quarter prior to MEDA 120 and MEDA 161.

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.

Revised June 2016 (Effective Fall 2016)

Associate in Applied Science (AAS)

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

- **Communications:**

10 credits - ENGL& 101 English Composition I AND ENGL& 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 Science/ 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.

• **Electives:**

5 credits – choose courses numbered 100 or above from the Distribution List for Professional/ Technical Degrees or PHED (up to 5 cr) or HOFL 131, 132, 133 (up to 3 cr).

Program Requirements

AH 104	Healthcare Foundations		2
AH 114	Healthcare Communication Skills		2
BTEC 145	Intro to Word <i>OR</i>	5 3	
CS 110	Intro to Microcomputer Apps		
BTEC 171	Medical Reception Procedures		3
BTEC 172	Medical Office Procedure		3
BTEC 173	Computers in the Medical Office		3
MEDA 101	Medical Vocabulary I <i>OR</i>		3
BTEC 181	Medical Terminology I		
MEDA 102	Medical Vocabulary II <i>OR</i>		3
BTEC 182	Medical Terminology II		
MEDA 120	Survey of Human A & P		5
MEDA 122	Law & Ethics for the Medical Office		3
MEDA 145	Medical Lab Procedures		6
MEDA 161*	Exam Room Procedures I		4
MEDA 162*	Exam Room Procedures II		4
MEDA 165	Meds in MEDA & Diseases		5
MEDA 190	MEDA to Preceptorship		5
MEDA 195	Medical Assisting Seminar		1

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

Total credits required to earn this degree: 90. For any course to count toward this degree, a grade of C or better is required.

NOTE: MATH 105, AH 104, 114, and BTEC 145 or CS 110 all with a grade of C or better must be completed before summer quarter prior to MEDA 120 and MEDA 161.

*MEDA 161 or MEDA 162 fulfill the Health requirement.

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.

Revised June 2016 (Effective Fall 2016)

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **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)

Program Requirements

BTEC 104	Intro to Business Technology OR	5-3
CS 110	Intro to Microcomputer Apps	
CS 121	Intro to Spreadsheets/Excel	5
CS 130	Intro to Database/Access	5
BTEC 161	Intro to ICD-10 Coding, Part I	5
BTEC 162	Intro to ICD-10 Coding, Part II	5
BTEC 163	Intro to Basic CPT Coding	5
BTEC 164	Legal Aspects of Medical Office	2
BTEC 165	Cultural Awareness for Care Prof.	3
BTEC 181	Medical Terminology I OR	3
MEDA 101	Medical Vocabulary	
BTEC 182	Medical Terminology II OR	3
MEDA 102	Medical Vocabulary	
MEDA 120	Survey of Human A & P	5
BTEC 294	Career Success	2

Total credits required to earn this certificate: 61-63 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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 July 2016 (Effective Fall 2016)

Associate in Applied Science (AAS)

Medical Office Administration

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

- **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 Professional/Technical Degrees.
- **Electives:**
4 credits – AH, BUS, BTEC, CDS, or CS

Core Program Requirements

ACCT 101 OR	Intro to Accounting Concepts	5
ACCT 135	Accounting for Non-accountants	
AH 166	Mental Health First Aid	1
BUS 119	Business Communications	5
BTEC 104	Intro to Business Technology	5
BTEC 111	Word Processing I	5
BTEC 112	Word Processing II	5
BTEC 130	Electronic Calculators	2
BTEC 144	OneNote Fundamentals	1
BTEC 148	Intro to Outlook	2
BTEC 164	Legal Aspects of the Medical Office	2

BTEC 165	Cultural Awareness f/Healthcare	2
BTEC 181	Medical Terminology I OR	3
MEDA 101	Medical Vocabulary I	
BTEC 182	Medical Terminology II OR	3
MEDA 102	Medical Vocabulary II	
BTEC 294	Career Success	2
CS 111	Intro to Windows	4
CS 121	Introduction to Spreadsheets	5
CS 130	Introductory Database Applications	5
HLTH 105	First Aid/CPR/BB Pathogens	1

Student will work with faculty program advisor to select ONE of the minor Certification areas of study listed below. Certificate will be awarded upon completion of requisite courses.

Medical Billing & Coding:

BTEC 161	Intro to ICD-10 Coding, Part I	5
BTEC 162	Intro to ICD-10 Coding, Part II	5
BTEC 163	Intro to Basic CPT Coding	5
BTEC 182 OR MEDA 102	Medical Terminology II Medical Vocabulary II	3
MEDA 120	Survey of Human A & P	5

Community, Health, & Wellness Advocate:

AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2
CDS 105	Chemical Dep./Domestic Violence	3
CDS 108	Comm. & School Based Prev/Interv.	5
HLTH 105	First Aid/CPR/BB Pathogens	1
HLTH 106	Health & Wellness Balance	3
BTEC 288	Cooperative Work Experience *	6
BTEC 289	Employment Portfolio Seminar	1

** Any combination of the following courses for a minimum of 6 credits, can be substituted for the 6 credits of BTEC 288 with the permission of the identified faculty program advisor:*

BTEC 150	Intro to Google Apps	3
BTEC 171	Medical Reception Procedures	3
BTEC 172	Medical Office Procedures	3
CDS 114	Suicide Assessment/Prevention	2

Medical Reception:

BTEC 171	Medical Reception Procedures	3
BTEC 172	Medical office Procedures	3
BTEC 173	computers in the Medical Office	3
BTEC 182 OR MEDA 102	Medical Terminology II OR Medical Vocabulary II	3

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

Total credits required to earn this degree: 90 and pass each course listed in program requirements with a C or better.

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

Revised July 2016 - Effective Fall 2016

Certificate of Proficiency (COP)

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. Many organizations across 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.php>

Certificate Requirements

- **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.

Program Requirements

BTEC 104	Intro to Business Technology	5
BTEC 111	Word Processing I	5
BTEC 130	Electronic Calculators	2
BTEC 144	OneNote Fundamentals	1
BTEC 165	Culture Awareness f/Healthcare	2
BTEC 171	Medical Reception Procedures	3
BTEC 181	Medical Terminology I OR	3
MEDA 101	Medical Vocabulary I	
BTEC 182	Medical Terminology II OR	3
MEDA 102	Medical Vocabulary II	
BTEC 294	Career Success	2

CS 111	Intro to Windows	4
HLTH 105	First Aid/CPR/BB Pathogens	1

Total credits required to earn this certificate: 46 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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

Revised July 2016 (Effective Fall 2016)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Music

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

- **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.
- **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.
- **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: 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 on the Distribution List for Transfer Degrees.

Recommended Electives

MUSC 101/2/3	Theory and Musicianship I,II,III	5 ea.
MUSC 111/2/3	Ear Training I,II,III	1 ea.
MUSC 176/7/8, 276/7/8	Individual Instruction I/VI	.5-1 ea.
For Instrumental Music Majors:		
MUSC 150	Symphonic Band	2
MUSC 130	Jazz Ensemble	2
For Vocal Music Majors:		
MUSC 141/2/3, 241/2/3	Concert Choir	1.5 ea.
MUSC 222	Opera Workshop	2
For General Music Majors:		
MUSC 106/7/8, 206/7/8	Group Piano Instruction	2 ea.

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 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.

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.

Revised April 2015 (Effective Fall 2015)

Certificate of Completion (COC)

Networking

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

CS 212	Local Area Networks: Theory and Application	5
CS 213	Local Area Networks: Theory and Application	5
CS 249	Advanced Operating Systems	5

Total credits required to earn this certificate: 15

Some courses have prerequisites; see catalog descriptions and CS advisor.

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.

Revised March 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Nursing

Prepare for upper division coursework in nursing. This degree option is designed for students who began the nursing program at LCC before January 2016, and plan to continue their education for a baccalaureate degree in nursing at an institution that offers an RN to BSN program. Students who begin the nursing program after January 2016 are to follow the Associate in Nursing DTA/MRP Academic Plan.

Degree Requirements

- **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 210 Elements of Statistics
- **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:**
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.
- **Social Sciences:**
15 credits – SOC& 101 Intro to Sociology:DIV, PSYC& 200 Lifespan Psychology, plus 5 credits from a third discipline (ANTH 206 recommended).
- **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.

Diversity and 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:

- 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.

Revised June 2015 (Effective Fall 2015)

Certificate of Completion (COC)

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.

Program Requirements

NURS 090	Nursing Assistant	8
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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.

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

Total credits required to earn this degree: 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.

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.

Revised January 2014 (Effective Fall 2014)

Certificate of Proficiency (COP)

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://lowercolumbia.edu/programs/gainful-employment.php>

Certificate Requirements

- **Communications:**
5 credits – ENGL 099 (was ENGL 100) College Ready English II OR ENGL& 101 English Composition I.
- **Quantitative Skills:**
5 credits –MATH 087/097 Essentials of Pre-College Math II OR MATH& 131 Math for Elementary Education I.
- **Human Relations/ Social Science:**
5 credits – PSYC& 100 General Psychology.
- **Electives:**
3 or 5 credits

Program Requirements

CS 110	Intro to Microcomputer Apps	3
EDUC 140	Education and the Law	3
EDUC 119	Curriculum and Instruction	2
EDUC& 203	Exceptional Child	3
EDUC& 205	Intro to Education w/Field Exp	5
EDUC 214	Instructional Strategies	3
EDUC 215	Classroom Management	3
PSYC& 200	Lifespan Psychology	5

Electives

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

Total credits required to earn this degree: 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.

Revised July 2016 (Effective Fall 2016)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Philosophy

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

- **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.
- **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.
- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

PHIL& 101	Intro to Philosophy	5
PHIL 120	Critical Reasoning	5
PHIL 210	Ethics	5
PHIL 260	Philosophy of Religion	5
PSYC& 100	General 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 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.

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 (Effective Fall 2014)

Associate in Sciences - Transfer (AS-T)

Physics

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

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

Pre-Major Requirements

CHEM& 161*	General Chemistry w/Lab I	5
MATH& 153*	Calculus III	5
MATH& 254*	Calculus IV (was MATH 154)	5
MATH 220	Linear Algebra	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Recommended Courses

ASTR& 101	Intro to Astronomy	5
CHEM& 162*	General Chemistry w/Lab II	5
CHEM& 163*	General Chemistry w/Lab III	5

CHEM& 261*	Organic Chemistry w/Lab I	5
CHEM& 262*	Organic Chemistry w/Lab II	5
CS 170	Fundamentals of Computer Prog	5
MATH 240	Differential Equations	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 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.

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 principled.
- 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.

Revised March 2013 (Effective Fall 2013)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Political Science

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

- **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.
- **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.
- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

POLS& 101	Intro to Political Science	5
POLS 107	Comparative Government	5
POLS& 202	American Government	5
POLS& 203	International Relations	5
POLS 220	The Law and Social Issues	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 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.

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.

Revised May 2014 (Effective Fall 2014)

Certificate of Proficiency (COP)

Practical Nurse

FOR CURRENTLY ENROLLED NURSING PROGRAM STUDENTS ONLY

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.

**Total credits required to earn this certificate: 80.*

Certificate Requirements

- **Communications:**
5 credits - ENGL& 101 English Composition I
- **Quantitative / Symbolic Reasoning Skills:**
5 credits – MATH 210 Elements of Statistics
- **Human Relations / Social Sciences / Diversity:**
5 credits – PSYC& 100 General Psychology
- **Natural Sciences:**

5 or 6 credits – BIOL& 241 Human A & P 1 W/Lab

Program Requirements

AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2
BIOL& 242	Human A & P 2 W/Lab	5 or 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

NOTE: MATH 210, 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.

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:

- 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.

Revised March 2015 (Effective Fall 2015)

Associate in Arts & Sciences (AA)

Pre-Dental Hygiene

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

- **Communications:**
15 credits – ENGL& 101 English Composition I (5 credits), AND ENGL& 102 English Composition II OR ENGL& 235 Technical Writing (5 credits), AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication (5 credits).
- **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:**
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.

Program Requirements

BIOL& 241*	Human A & P 1	5 or 6
BIOL& 242*	Human A & P 2	5 or 6
BIOL& 260	Microbiology	6
CHEM& 121	Intro to Chemistry	5
CHEM& 131	Intro to Organic/ Biochemistry	5
NUTR& 101	Nutrition	5
MATH 098/099	Pre-College Math III	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 in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0.

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.

Revised February 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)**Pre-Law**

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

- **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.
- **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.
- **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.
- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

BUS& 201	Business Law	5
CJ 154	The American Legal System	5
CJ 286	Criminal Law Administration	5
POLS& 101	Intro Political Science	5
POLS 220	The Law and Social Issues	5
PSYC 204	Applied Psychology	5
SOC& 101	Introduction to Sociology:DIV	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 in courses numbered 100 or above with a cumulative grade point average of at least 2.0. A course cannot be credited toward more than one distribution area.

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 (Effective Fall 2014)

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **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 106 Industrial Mathematics.
- **Human Relations/ Social Science:**
5 credits – BUS 144 Management of Human Relations.

Program Requirements

CS 110	Intro to Microcomputer Apps	3
MFG 120	Quality Assurance	4
MFG 140	Industrial Hydraulics	4
PMFG 110	Industrial Maintenance	5
PMFG 150	Electrical/Electronic fundamentals	5
PMFG 151	Process Control Equipment	6
PMFG 152	Process Control Systems	5
PMFG 201	Electrical Control Equipment	3
PMFG 202	Electric Motors	2
PMFG 210	Advanced Industrial Maintenance	5

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

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.

Revised May 2015 (Effective Fall 2015)

Certificate of Completion (COC)

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

CS 175	Event-Driven Programming	5
CS 270	Data Structures I	5
CS 275	Object-Oriented Programming in Java	5

Total credits required to earn this certificate: 15

Some courses have prerequisites; see catalog descriptions and CS advisor.

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.

Revised March 2012 (Effective Fall 2012)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Psychology

Work as a guidance counselor, clinical psychologist, social worker or educator after earning your bachelor's degree. Psychology courses also supplement majors in health sciences, social sciences, business and law.

Degree Requirements

- **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.

- **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.

- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

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 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 area.

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.

Revised May 2014 (Effective Fall 2014)

Associate in Nursing - Direct Transfer Agreement (AN-DTA/MRP)

Registered Nurse

This degree prepares students for licensure and employment as a registered nurse, as well as for continuing nursing education for a baccalaureate degree in nursing. Students who complete this degree and pass the registered nurse license exam (NCLEX-RN) may enter participating Bachelor of Science in Nursing programs in Washington State as seniors. The Nursing Program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing.

Degree Requirements

- **Communications:**
10 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition II OR SPCH 110 Intro to Public Speaking.
- **Quantitative Skills:**
5 credits – MATH 210 Elements of Statistics
- **Humanities:**
15 credits – *HUM 150, 250, 251: Ethics and Policy in Healthcare I (1 cr), II (2 cr), & III (2 cr) (taken after admission to Nursing Program); 10 credits selected from at least two 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. Five of these credits must also meet the DIV requirement.
- **Natural Sciences:**
30 credits – BIOL& 160, BIOL& 241, BIOL& 242, BIOL& 260, CHEM& 121, NUTR& 101
- **Social Sciences:**
15 credits – PSYC& 100 General Psychology; PSYC& 200 Lifespan Psychology; *PSYC 150 & 250: Psychosocial Issues in Healthcare I (2 cr), & II (3 cr) (taken after admission to Nursing Program)
- **Diversity:**
5 credits. Must be met by a course on both the Humanities distribution list and the DIV course list.
- **Electives:**
Fulfilled by 15 credits of the Nursing courses

Nursing Courses

NURS 150	Pharmacology in Nursing I	2
NURS 151	Nurs Concepts/Health & Illness I	3
NURS 152	Nurs concepts/Health & Illness II	5
NURS 153	Nurs Concepts/Health & Illness III	5
NURS 160	Skills in Nursing I	2
NURS 161	Nursing Practicum I	3
NURS 162	Nursing Practicum II	5
NURS 163	Nursing Practicum III	5
NURS 250	Pharmacology in Nursing II	1
NURS 251	Nurs Concepts/Health & Illness IV	4
NURS 252	Nurs concepts/Health & Illness V	5
NURS 253	Nurs Concepts/Health & Illness VI	5
NURS 260	Skills in Nursing II	1
NURS 261	Nursing Practicum IV	4
NURS 262	Nursing Practicum V	5
NURS 263	Nursing Practicum VI	5

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

Total credits required to earn this degree: 135. Additional credits may be used to satisfy degree requirements, but only 135 credits will transfer to four-year institutions.

*Note: Admission to the nursing program is required for all NURS courses, as well as HUM 150, 250, 251, PSYC 150 and 250.

Admission is competitive. **Grade of C or higher is required in all courses.** ENGL& 101, MATH 210, PSYC& 100, PSYC& 200, BIOL& 160, BIOL& 241, BIOL& 242, BIOL& 260, and CHEM& 121 must be completed or in process to apply. It is recommended that the communications courses, NUTR& 101, and the 10 credits of humanities (5 of which must be DIV) be completed prior to beginning the nursing coursework.

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

- Demonstrate critical thinking by applying objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions in nursing practice.
- Demonstrate competence in basic nursing knowledge and skills in the performance of the nursing roles as provider of care, manager of care, and member of the profession.
- Communicate effectively in professional nursing practice.
- Process and utilize quantitative data in professional nursing practice.
- Incorporate professional interpersonal skills and caring behaviors in nursing practice.
- Recognize the importance of life-long learning to success in the profession of nursing.

Revised June 2016 (Effective Fall 2016)

Associate in Applied Sciences - Transfer (AAS-T)

Registered Nurse

FOR CURRENTLY ENROLLED NURSING PROGRAM STUDENTS ONLY

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

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:**
5 credits – MATH 210 Elements of Statistics.
- **Natural Sciences:**
5 or 6 credits – BIOL& 241 Human A & P 1 W/Lab.
- **Social Sciences:**
5 credits – PSYC& 100 General Psychology.
- **Diversity:**
5 credits –SOC& 101 Intro to Sociology:DIV

Program Requirements

AH 104	Healthcare Foundations	2
AH 114	Healthcare Communication Skills	2

AH 230	Mgmt. Issues in Healthcare	1
BIOL& 242	Human A & P 2 W/Lab	5 or 6
BIOL& 260	Microbiology	5
CHEM& 121	Intro to Chemistry	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
NURS 201	Adv. Comprehensive Nursing I	5
NURS 202	Adv. Comprehensive Nursing II	5
NURS 203	Adv. Comprehensive Nursing III	5
NURS 221	Adv. Comp. Nursing I - Clinical	5
NURS 222	Adv. Comp. Nursing II - Clinical	5
NURS 223	Adv. Comp. Nursing III - Clinical	5
PSYC& 200	Lifespan Psychology	5

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

Total credits required to earn this degree: 120

NOTE: MATH210, PSCY&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.

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

- Demonstrate critical thinking by applying objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions in nursing practice.
- Demonstrate competence in basic nursing knowledge and skills in the performance of the nursing roles as provider of care, manager of care, and member of the profession.
- Communicate effectively in professional nursing practice.
- Process and utilize quantitative data in professional nursing practice.
- Incorporate professional interpersonal skills and caring behaviors in nursing practice.
- Recognize the importance of life-long learning to success in the profession of nursing.

Revised June 2015 (Effective Fall 2015)

Associate in Applied Sciences - Transfer (AAS-T)

Registered Nurse - LPN2RN (Campus-Based)

FOR CURRENTLY ENROLLED NURSING PROGRAM STUDENTS ONLY

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.

Opt-In Option (Requires LPN license)

Degree Requirements

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:**
5 credits – MATH 210 Elements of Statistics.
- **Natural Sciences:**
5 credits – BIOL& 241 Human A & P 1 W/Lab.
- **Social Sciences:**
5 credits – PSYC& 100 General Psychology.
- **Diversity:**
5 credits – SOC& 101 Intro to Sociology:DIV

Program Requirements

AH 230	Mgmt. Issues in Healthcare	1
BIOL& 242	Human A & P 2 W/Lab	5
BIOL& 260	Microbiology	5
CHEM& 121	Intro to Chemistry	5
NURS 201	Adv. Comprehensive Nursing I	5
NURS 202	Adv. Comprehensive Nursing II	5
NURS 203	Adv. Comprehensive Nursing III	5
NURS 209*	Nursing Success	3
NURS 221	Adv. Comp. Nursing I - Clinical	5
NURS 222	Adv. Comp. Nursing II - Clinical	5
NURS 223	Adv. Comp. Nursing III - Clinical	5
PSYC& 200	Lifespan Psychology	5

*not required for recent LCC graduates; see advisor.

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.

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

Total credits required to earn this degree: 120-123

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

- Demonstrate critical thinking by applying objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions in nursing practice.

- Demonstrate competence in basic nursing knowledge and skills in the performance of the nursing roles as provider of care, manager of care, and member of the profession.
- Communicate effectively in professional nursing practice.
- Process and utilize quantitative data in professional nursing practice.
- Incorporate professional interpersonal skills and caring behaviors in nursing practice.
- Recognize the importance of life-long learning to success in the profession of nursing.

Revised June 2015 (Effective Fall 2015)

Associate in Applied Sciences - Transfer (AAS-T)

Registered Nurse - LPN2RN (eLearning)

*****FOR CURRENTLY ENROLLED NURSING PROGRAM STUDENTS ONLY*****

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.

(Requires LPN license)

Degree Requirements

- **Communications:**
5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:**
5 credits – MATH 210 Elements of Statistics.
- **Natural Sciences:**
5 or 6 credits – BIOL& 241 Human A & P 1 W/Lab.
- **Social Sciences:**
5 credits – PSYC& 100 General Psychology.
- **Diversity:**
5 credits - SOC& 101 Intro to Sociology:DIV.

Program Requirements

BIOL& 242	Human A & P 2 W/Lab	5 or 6
BIOL& 260	Microbiology	5
CHEM& 121	Intro to Chemistry	5
NURS 241	Essential Concepts of Nursing Prac	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
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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 and have worked 1,000 hours as an LPN in the last three years. 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.

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

Total credits required to earn this degree: 124

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

- Demonstrate critical thinking by applying objective, valid methods of inquiry and problem solving to draw rational, ethical, and coherent conclusions in nursing practice.
- Demonstrate competence in basic nursing knowledge and skills in the performance of the nursing roles as provider of care, manager of care, and member of the profession.
- Communicate effectively in professional nursing practice.
- Process and utilize quantitative data in professional nursing practice.
- Incorporate professional interpersonal skills and caring behaviors in nursing practice.
- Recognize the importance of life-long learning to success in the profession of nursing.

Revised June 2015 (Effective Fall 2015)

Certificate of Completion (COC)

Retail Management

The Retail Management Certificate of Completion 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.php>

Certificate Requirements

- **Communications:**
5 credits - BUS 119 Business Communications
- **Human Relations / Social Science:**
5 credits – BUS 144 Management of Human Relations.

Program Requirements

ACCT 101	Intro to Accounting Concepts	5
BUS 159	Principles of Retailing	5
BUS 244	Human Resource Management	5
BUS 245	Principles of Management	5
BUS 264	Principles of Marketing	5

CS 110	Intro to Microcomputer Apps	3
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Total credits required to earn this certificate: 38

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 March 2015 (Effective Fall 2015)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Sociology

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

- **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.
- **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.
- **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 on the Distribution List for Transfer Degrees.

Recommended Electives

ART 207	Arts of the World:DIV	5
PSYC& 100	General Psychology	5
SOC 210	Human Sexuality:DIV	5
SOC 225	Race and Ethnicity:DIV	5
SPCH 104	Interpersonal Communication	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 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.

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).

Revised May 2014 (Effective Fall 2014)

Associate in Arts - Direct Transfer Agreement (AA-DTA)

Speech

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

- **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.
- **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.
- **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: 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 Electives

SPCH 104	Interpersonal Communication	5
SPCH 109	Intercultural Communication:DIV	5
SPCH 136/7/8, 236/7/8	Intercollegiate Debate	2 ea.
SPCH 126/7/8, 226/7/8	Competitive Public Speaking	2 ea.
SPCH 209	Rhetorical Criticism/Pop Culture:DIV	5
If not used for Communication requirement:		
SPCH 110	Intro to Public Speaking OR	5
SPCH 114	Small Group Communication	

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

Total transferable credits required to earn this degree: 90 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.

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

Revised May 2014 (Effective Fall 2014)

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

- **Communications:**
10 credits - ENGL& 101 English Composition I AND ENGL& 235 Technical Writing.
- **Quantitative/Symbolic Reasoning Skills:**
10 credits – MATH& 142 Precalculus II AND MATH 215 Discrete Structures.
- **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.
- **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.
- **Social Sciences:**
15 credits – Selected from at least two disciplines from the Distribution List for Transfer Degrees, no more than 10 credits in a single discipline.

- **Technology:**
6 credits – ENGR& 121 Engineering Graphics I AND ENGR& 122 Engineering Graphics II.
- **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.

Recommended Electives

PHYS& 115	General Physics II w/Lab	5
PHYS& 116	General Physics III w/Lab	5

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

Total transferable credits required to earn this degree: 91 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.

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.

Revised September 2013 (Effective Fall 2013)

Certificate of Completion (COC)

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

ART 162	Beginning Photoshop Design	3
CS 230	Database Development	5
CS 175	Event-Driven Programming OR	5
CS 275	Object-Oriented Programming in Java	

Total credits required to earn this certificate: 13

Some courses have prerequisites; see catalog descriptions and CS advisor.

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.

Revised March 2012 (Effective Fall 2012)

Associate in Applied Science (AAS)

Welding

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

- **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 Science:**
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

BLPT 160	Blueprint Reading for Welders	5
CS 110	Intro to Microcomputer Applications	3
WELD 151	Intro to Oxy-Acetylene	6
WELD 152	Intro to Arc Welding	10
WELD 158	Welding Theory & Fabrication	5
WELD 221	Wire Machine	10
WELD 222	Advanced Wire Machine	6
WELD 254	Arc Welding	10
WELD 255	Advanced Welding Processes	6
WELD 256	Advanced Welding Application	10
WELD 070/075	Welding Certification (WABO)	0

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

Total credits required to earn this degree: 94 with a cumulative grade point average (GPA) of at least 2.0 in the program requirements.

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

Revised April 2014 (Effective Fall 2014)

Certificate of Proficiency (COP)

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.php>

Certificate Requirements

- **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

BLPT 160	Blueprint Reading for Welders	5
CS 110	Intro to Microcomputer Applications	3
WELD 151	Intro to Oxy-Acetylene	6
WELD 152	Intro to Arc Welding	10
WELD 158	Welding Theory & Fabrication	5
WELD 221	Wire Machine	10

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

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.

Revised January 2015 (Effective Fall 2015)

Courses Descriptions

Distribution List Symbols

Symbol	Definition
H	Course meets distribution credit in Humanities.
HA	Course meets distribution credit in Humanities only for AAS and AAS-T degrees.
SS	Course meets distribution credit in Social Science.
SSA	Course meets distribution credit in Social Science only for AAS and AAS-T degrees.
NS	Course meets distribution credit in Natural Sciences.
NSA	Course meets distribution credit in Natural Sciences only for AAS and AAS-T degrees.
NSL	**Course meets distribution credits in Natural Sciences as a lab course.
P	*Course meets distribution credits as a performance based course.
PE	Course meets distribution credits as physical education activity course.
RE	Course meets distribution credits as a restricted elective.
&	Course is part of the Washington Community Colleges' Common Course Numbering system.
F	Course usually offered Fall Quarter.
W	Course usually offered Winter Quarter.
Sp	Course usually offered Spring Quarter.
S	Course usually offered Summer Quarter.

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Accounting (ACCT)

ACCT 101 **F,W,Sp** **5 credits**

INTRODUCTION TO ACCOUNTING CONCEPTS **RE**

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 079 or TECH 079 or higher with a grade of C or higher or instructor permission.

ACCT 135 **S,W,Sp** **5 credits**

ACCOUNTING FOR NON-ACCOUNTANTS **RE**

Introduces the basic elements of financial and managerial accounting. Topics include an overview of the accounting cycle, financial statement preparation, elements of statement analysis, break-even analysis, CVP analysis, and an overview of budgeting.

Prerequisites: Math 079 or TECH 079 or higher with a grade of C or higher or instructor permission.

ACCT 150 **Sp** **5 credits**

PAYROLL ACCOUNTING AND BUSINESS TAX REPORTING **RE**

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 **E**

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. (Formerly known as ACCT 231)

Prerequisites: MATH 088 or TECH 088 with a grade of C or higher or instructor permission. No previous accounting courses are required.

ACCT&202 **W** **5 credits**

PRINCIPLES OF ACCOUNTING II **E**

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 cash flows and financial statement analysis. Financial accounting theory is discussed and applied throughout the course. (Formerly known as ACCT 232)

Prerequisite: ACCT& 201 (was ACCT 231) with a grade of C or better.

ACCT&203 **S,W,Sp** **5 credits**

PRINCIPLES OF ACCOUNTING III **E**

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. (Formerly known as ACCT 233)

Prerequisites: ACCT& 201 (was ACCT 231) with a grade of C or better and basic spreadsheet skills.

ACCT 241 **5 credits**

INTRO TO QUICKBOOKS **RE**

Provides experience with a multi-function electronic accounting system. Covers entering business transactions in the general ledger and subsidiary accounts such as payroll, accounts receivable, accounts payable, inventory, and fixed assets. Presents common accounting problems associated with the electronic accounting process. This course can be used as a stand-alone course for experienced professionals.

Prerequisites: ACCT 101 or ACCT& 201 and CS 110 or CS 111, or instructor permission.

ACCT 244 **5 credits**

INDIVIDUAL INCOME TAXATION **RE**

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 275 **W** **5 credits**

ACCOUNTING TECH CAPSTONE **RE**

Prepares students for the workplace by providing a review and extension of skills acquired in previous courses. Topics include accounting cycle review, adjusting entries, problems in QuickBooks, payroll accounting, and internal control principles.

Prerequisites: ACCT 150, ACCT& 201 and ACCT 241 or instructor permission.

Adult Basic Education (ABE)

ABE 040 **1-20 credits**

ABE HS 21+ ELECTIVES

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Electives course.

Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 041 **1-20 credits**
ABE HS 21+ ENGLISH
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a High Adult Secondary Education English reading and writing course.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 042 **1-20 credits**
ABE HS 21+ MATH
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a High Adult Secondary Education math course
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 043 **1-20 credits**
ABE 21+ SCIENCE AND LAB SCIENCE
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a High Adult Secondary Education English reading and writing course contextualized in science.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 044 **1-20 credits**
ABE HS 21+ US HISTORY AND GOVERNMENT
 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
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 045 **1-20 credits**
ABE HS 21+ WASHINGTON STATE HISTORY
 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.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 047 **1-20 credits**
ABE HS 21+ OCCUPATIONAL
 Strengthen a student's communication, technology, and/or interpersonal skills in order to enhance their personal, social, and workplace environments in an ABE 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.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 048 **1-20 credits**
ABE HS 21+ HEALTH AND P.E.
 Strengthen basic academic skills while focusing on health, nutrition, and fitness in order to enhance their personal, social, and workplace environments in an ABE 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.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 049 **1-20 credits**
ABE HS 21+ 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 ABE 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.
 Prerequisites: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission

ABE 051 **1-20 credits**
ENGLISH LEVEL A
 Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a Beginning reading and writing course.
 Prerequisite: CASAS appraisal exam and CASAS appraisal score of 200 and below

ABE 052 **1-20 credits**
MATH LEVEL A
 Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a beginning math course.
 Prerequisites: CASAS appraisal exam and CASAS appraisal score of 200 and below

ABE 053 **1-20 credits**
INTEGRATED LEVEL A
 Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a beginning literacy integrated course (integrating reading, writing, math, and technology).
 Prerequisites: CASAS appraisal exam and CASAS appraisal score of 200 and below

ABE 061 ENGLISH LEVEL B	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low intermediate basic education reading and writing course. Prerequisite: CASAS appraisal exam and CASAS appraisal score of 201-220	
ABE 062 MATH LEVEL B	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low intermediate basic education math course. Prerequisite: CASAS appraisal exam and CASAS appraisal score of 201-220	
ABE 063 INTEGRATED LEVEL B	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low intermediate basic education integrated course (integrating reading, writing, math, and technology). Prerequisites: CASAS Appraisal Exam and CASAS Appraisal score of 201-220	
ABE 070 EDUCATIONAL INTERVIEW-ABE	1-3 credits
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. Prerequisite: None.	
ABE 071 ENGLISH LEVEL C	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high intermediate basic education reading and writing course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 221-235	
ABE 072 MATH LEVEL C	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high intermediate math course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 221-235	
ABE 073 INTEGRATED LEVEL C	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high intermediate basic education integrated course (integrating reading, writing, math, and technology). Prerequisites: CASAS Appraisal Exam and CASAS Appraisal score of 221-235	

ABE 081 ENGLISH LEVEL D	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low adult secondary education reading and writing course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 236-245	
ABE 082 MATH LEVEL D	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low adult secondary education math course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 236-245	
ABE 083 INTEGRATED LEVEL D	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a low adult secondary education integrated course (integrating reading, writing, math, and technology). Prerequisites: CASAS appraisal exam and CASAS appraisal score of 236-245	
ABE 091 ENGLISH LEVEL E	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high adult secondary education reading and writing course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 246 and higher	
ABE 092 MATH LEVEL E	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high adult secondary education math course. Prerequisites: CASAS appraisal exam and CASAS appraisal score of 246 and higher	
ABE 093 INTEGRATED LEVEL E	1-20 credits
Strengthens basic academic skills in order to enhance personal, social, and workplace environments in a high adult secondary education integrated course (integrating reading, writing, math, and technology). Prerequisites: CASAS Appraisal Exam and CASAS Appraisal score of 246 and higher	

ABE 094 **1-20 credits**
I-BEST ACADEMIC SUPPORT LEVEL E

A high adult secondary education level ABE course for students who are currently working or preparing to work in a specific job area and who 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.

Prerequisites: CASAS Appraisal Exam and CASAS Appraisal score of 236 and higher

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.

Prerequisite: None

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.

Prerequisite: None

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.

Prerequisite: None

AH 100 **F,W** **1 credit**
BLOOD BORNE PATHOGENS & INFECTION CONTROL **RE**

Examines bloodborne illnesses: etiology, epidemiology, clinical manifestations, treatment, transmission, testing, infection control, legal, ethical, psychosocial and counselling issues. Successful completion (grade of C or above) fulfills Washington state Department of Licensing requirement for license renewal for persons governed by chapter 18.130.RCW; including 7 hours of OSHA-required HIV/AIDS education.

Prerequisites: None

AH 104 **S,F,W,Sp** **2 credits**
HEALTH CARE FOUNDATIONS **RE**

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: ENGL 099 with a grade of C or higher (or ENGL& 101 placement), or instructor permission.

AH 114 **S,F,W,Sp** **2 credits**
HEALTHCARE COMMUNICATION SKILLS **RE**

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.

Prerequisite: ENGL 099 with a grade of C or higher (or ENGL& 101 placement), or instructor permission.

AH 166 **1 credit**
MENTAL HEALTH FIRST AID FOR ADULTS

Prepares participants to assist an individual who may be developing a mental health problem or experiencing a mental health crisis. Includes risk factors and warning signs of mental health problems. Provides information on depression, anxiety, trauma, psychosis, and addiction. Presents a 5-step action plan for assisting an individual with a mental health problem or crisis. Discusses identification and utilization of resources. Content is based on the National Council for Behavioral Mental Health First Aid USA training program. Upon successful completion of the course, certification in Mental Health First Aid is awarded.

Prerequisites: None

AH 167 **1 credit**
MENTAL HEALTH FIRST AID FOR YOUTH
 Prepares participants to assist an individual who may be developing a mental health problem or experiencing a mental health crisis. Includes risk factors and warning signs of mental health problems. Provides information on depression, anxiety, trauma, psychosis, and addiction. Presents a 5-step action plan for assisting an individual with a mental health problem or crisis. Discusses identification and utilization of resources. Content is based on the National Council for Behavioral Mental Health First Aid USA training program. Upon successful completion of the course, certification in Mental Health First Aid is awarded.
 Prerequisites: None

AH 230 **F,W,Sp** **1 credit**
MANAGEMENT ISSUES IN HEALTH CARE **RE**
 Explores leadership, management, legal, ethical, and research issues essential to nursing practice.
 Prerequisite: Concurrent enrollment in NURS 201

American Sign Language (ASL)

ASL& 121 **F** **5 credits**
AMERICAN SIGN LANGUAGE I **H**
 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.
 Prerequisites: None

ASL& 122 **W** **5 credits**
AMERICAN SIGN LANGUAGE II **H**
 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.
 Prerequisites: ASL& 121 with a grade of C or better.

ASL& 123 **Sp** **5 credits**
AMERICAN SIGN LANGUAGE III:DIV **H,D**
 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.
 Prerequisites: ASL& 122 with a grade of C or better.

Anthropology (ANTH)

ANTH&100 **Sp** **5 credits**
SURVEY OF ANTHROPOLOGY:DIV **SS,D**
 Provides a holistic and comparative study of human life through a survey of four subfields (archaeology, biological/physical anthropology, cultural anthropology, and linguistic anthropology). Acquaints students with the history, methods, and major concepts of the field and give an overview of the range of potential social problems that anthropologists are particularly well-positioned to help solve.
 Prerequisites: None

ANTH 109 **Sp** **5 credits**
AMERICAN CULTURAL DIVERSITY:DIV **SS,D**
 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.
 Prerequisite: None

ANTH&205 **F,Sp** **5 credits**
BIOLOGICAL ANTHROPOLOGY **NS**
 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. (Formerly known as ANTH 206)
 Prerequisite: None

ANTH&206 **W** **5 credits**
CULTURAL ANTHROPOLOGY:DIV **SS**
 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. (Formerly known as ANTH 207)
 Prerequisite: None

Art (ART)

ART& 100 S,F,W,Sp 5 credits ART APPRECIATION:DIV H

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 (was Art 110) is a transferable course. It fulfills the requirements of the AA-DTA Humanities distribution list.
Prerequisite: none

ART 101 S,F,W,Sp 3 credits BEGINNING DRAWING H,P

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.
Prerequisite: None

ART 102 S,F,W,Sp 3 credits INTERMEDIATE DRAWING H,P

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 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 S,F,W,Sp 5 credits BASIC DESIGN H,P

Introduces the theory and fundamentals of visual organization through the explanation of black and white media.
Prerequisite: None

ART 107 S,F,W,Sp 5 credits BASIC DESIGN I H,P

Introduces the theory and application of color to specific two-dimensional and three-dimensional design problems.
Prerequisite: None.

ART 108 F,W,Sp 3 credits BASIC DESIGN II H,P

Introduces three-dimensional form and space with emphasis on materials, spatial composition, and fabrication.
Prerequisite: None.

ART 111 S,F,W,Sp 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.
Prerequisite: None

ART 112 S,F,W,Sp 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 S,F,W,Sp 3 credits ADVANCED 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 E

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.
Prerequisites: Basic computing skills using the Windows O/S recommended.

ART 154 F,W 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.
Prerequisite: None

ART 155 **F,W** **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 aperture and shutter speed. (Formerly ART 151A)
 Prerequisite: none

ART 156 **W** **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 **Sp** **3 credits**
INTERMEDIATE PHOTOGRAPHY **H,P**
DOCUMENTARY
 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.

ART 158 **Sp** **3 credits**
ADVANCED PHOTO DIGITAL AND ANALOG **H,P**
 Provides students with a continuation of photographic exploration, with an emphasis on fine art applications, some of which may blend both traditional and new technologies. Students will continue to fine tune their technical skills as well as develop their own visual style.
 Prerequisite: ART 156 or ART 157 or instructor permission.

ART 162 **F,W,Sp** **3 credits**
PHOTOSHOP FOR WEB AND PRINT **E**
 Introduces Adobe Photoshop basic skills including palettes, tools, layers, masks, image correction and manipulation. Emphasizes skill building applicable to photography, web design, and graphic design essentials. Basic computer skills required.
 Prerequisite: None

ART 206 **5 credits**
ARTS OF THE AMERICAS:DIV **H**
 A comparative investigation into the development of artistic themes and styles within the cultures of North, Central, and South America past and present. Study will include an exploration into the migration and settlement of indigenous peoples of the Americas as represented by their art forms, the impact of European colonization on art and culture, and a look at cultural and historical interpretations addressed by contemporary artists.
 Prerequisite: None

ART 207 **5 credits**
ARTS OF THE WORLD:DIV **H**
 A comparative investigation into the development of artistic themes and styles in Asia, Africa, and Oceania past and present. Study will include an exploration into the components of society, the development of belief systems, and the formation of worldviews as represented by art and architecture. In addition, emphasis will be placed on cultural and historical interpretations that inform the ideology and art of contemporary artists in terms of contemporary cultural identities and the challenges they pose.
 Prerequisite: None

ART 208 **5 credits**
ARTS OF THE PACIFIC NORTHWEST:DIV **H,D**
 A comparative investigation into the development of artistic themes and styles within the cultures of the Pacific Northwest past and present. Study will include an exploration into the migration and settlement of indigenous peoples of the Pacific Northwest as represented by their art forms, the impact of European colonization on art and culture, and a look at cultural and historical interpretations addressed by contemporary artists.
 Prerequisite: None

ART 226 **F** **5 credits**
HISTORY OF WESTERN ART **H**
 History of Western Art is an investigation into the development of art from before history through the Roman Empire, approximately 35,000 BCE to 500 CE. This study includes a conceptual look at the emergence of the creative spark and why art and architecture exists. A comprehensive look at art from the prehistoric natural world, through the emergence of civilization and social organization in ancient cultures, to the glory of Greece and Rome, art continues to interpret culture and to shape contemporary lives.
 Prerequisite: None

ART 227 **W** **5 credits**
HISTORY OF WESTERN ART **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. This study includes a comprehensive look at art and architecture as it reflects changing world views as art continues to interpret culture and to shape contemporary lives.
 Prerequisite: None

ART 228 **Sp** **5 credits**
HISTORY WESTERN ART:DIV **H,D**
 Investigates the development of art from 17th century Europe, through its introduction to America, and into 21st Century Europe and the United States. This 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.
 Prerequisite: None.

ART 241 **S,F,W,Sp** **3 credits**
BEGINNING CERAMIC ART POTTERY **H,P**
 Introduces the study of ceramic materials and techniques including hand construction and wheel throwing.
 Prerequisite: None

ART 242 **S,F,W,Sp** **3 credits**
INTERMEDIATE CERAMIC ART POTTERY **H,P**
 Involves more advanced techniques of hand construction and wheel throwing. Beginning glaze formation and kiln-firing processes are included.
 Prerequisite: ART 241 with a grade of C or better.

ART 243 **S,F,W,Sp** **3 credits**
ADVANCED CERAMIC ART POTTERY **H,P**
 Continues wheel and hand forming techniques with emphasis on aesthetics, including decoration and glazing.
 Prerequisite: ART 242 with a grade of C or better.

ART 290 **S,F,W,Sp** **1-3 credits**
ART STUDIO LAB-CERAMICS **E**
 Provides lab opportunity in ceramics for students who have completed ART 241, 242, 243.
 Prerequisite: Instructor permission

ART 295 **S,F,W,Sp** **1-3 credits**
ART LAB - PHOTOGRAPHY **E**
 Provides lab opportunity in photography for students who have completed ART 158. Students will develop a description/contract of what they would like to focus their study on.
 Prerequisite: ART 158 or instructor permission.

Astronomy (ASTR)

ASTR&101 **S,F,W** **5 credits**
INTRO 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. (Formerly known as ASTR 110.)
 Prerequisite: None.

Automotive Technology (AMTC)

AMTC 100 **W** **5 credits**
ESSENTIALS OF MECHANICS **RE**
 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. (was ADT 100)
 Prerequisite: None

AMTC 101 **F** **5 credits**
ELECTRICAL SYSTEMS I **RE**
 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. (Was ADT 101)
 Prerequisite: None

AMTC 102 **F** **10 credits**
ELECTRICAL SYSTEMS II **RE**
 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. (was ADT 102)
 Prerequisite: AMTC 101 (was ADT 101) or instructor permission.

AMTC 104 **Sp** **8 credits**
VEHICLE CLIMATE CONTROL **RE**
 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.
 Prerequisites: AMTC 102 or instructor permission.

AMTC 111 **W** **5 credits**
HYDRAULIC BRAKES **RE**
 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. (was ADT 111)
 Prerequisite: None

AMTC 112 **W** **3 credits**
ANTILOCK BRAKES AND TRACTION CONTROL **RE**
 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. (was ADT 112)
 Prerequisite: AMTC 111 (was ADT 111) or instructor permission.

AMTC 121 **Sp** **5 credits**
GAS ENGINES I **RE**
 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. (was ADT 121)
 Prerequisite: None

AMTC 122 **Sp** **1-10 credits**
GAS ENGINES II **RE**
 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. (was ADT 122)
 Prerequisite: AMTC 121 (was ADT 121) or instructor permission.

AMTC 201 **W** **12 credits**
FUELS AND EMISSIONS **RE**
 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 (A8) certification.
 Prerequisites: AMTC 102 or instructor permission.

AMTC 202 **Sp** **12 credits**
AUTOMOTIVE COMPUTER SYSTEMS **RE**
 Covers advanced theory, operation, diagnosis and repair of automotive fuel systems. Includes injection, storage, and delivery systems. Covers materials necessary to pass ASE (A8 and L1) certification.
 Prerequisites: AMTC 201 or instructor permission.

AMTC 215 **W** **8 credits**
SUSPENSION AND ALIGNMENT **RE**
 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. (was ADT 215)
 Prerequisite: None

AMTC 216 **F** **8 credits**
AUTOMATIC TRANSMISSION **RE**
 Studies hydraulic principle of pressure and force multiplication, operation, diagnosis and repair of automotive automatic transmissions and transaxles. (was ADT 216)
 Prerequisite: None

AMTC 217 **F** **6 credits**
POWERTRAINS **RE**
 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. (was ADT 217)
 Prerequisite: None

Biology (BIOL)

BIOL&100 **F,W** **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.
 Prerequisite: None

BIOL 109 **S,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.
 Prerequisite: None.

BIOL 130 F 5 credits

BIODIVERSITY 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 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.

Prerequisites: none

BIOL&160 S,F,W,Sp 5 credits
GENERAL BIOLOGY WITH LAB NSL

Introduces cell biology lecture and lab course including the chemistry of life, the structure, reproduction, and metabolism of cells, genetics, and evolutionary biology. The topics are similar to BIOL 211 (General Biological Science) but are covered in less depth. Lab is inquiry based. BIOL& 160 is a

prerequisite for BIOL& 241 (Human Anatomy and Physiology 1) and BIOL& 260 (Microbiology). A grade of C or higher is required in order to advance to Biol& 241 or BIOL& 260. Intended for non-biology majors, pre-nursing, pre-dental hygiene, pre-occupational therapy and other pre-allied health students. Prerequisites: None

BIOL 179 5 credits
HUMAN BIOLOGY & EXERCISE

Introduces fundamental biological principles from cells to human organ systems. Provides comprehensive coverage of the physiology of exercise and its role in successful integration of exercise principles into exercise programs. Laboratory is included.

Prerequisites: None

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. (Formerly known as BIOL 201)

Prerequisite: CHEM& 161 or CHEM& 121 or instructor permission.

BIOL&212 W 5 credits
MAJORS BIOLOGY ANIMAL NSL

Continues these 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. (Formerly known as BIOL 202)

Prerequisite: BIOL& 211 (was BIOL 201) with 2.0 or better.

BIOL&213 W,Sp 5 credits
MAJORS BIOLOGY PLANT NSL

Continues these 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. (Formerly known as BIOL 202)

Prerequisite: BIOL& 212 (was BIOL 202) with 2.0 or better.

BIOL&241 S,F,W,Sp 5 credits
HUMAN A & P 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 transferrable unless the entire sequence (BIOL& 241 and 242) is taken at LCC.

Prerequisite: BIOL& 160, BIOL& 260 or BIOL& 211 with a grade of C or above. Prerequisite waiver may be granted with appropriate documentation to the instructor.

BIOL&242 S,F,W,Sp 5 credits
HUMAN A & P 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.

Prerequisites: BIOL& 241 with a C or better. Prerequisite waiver may be granted with appropriate documentation to the instructor.

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.
 Prerequisites: BIOL& 160 or BIOL& 211 with a grade of C or better or instructor permission.

BIOL 298 1 credit
SPECIAL TOPICS IN HUMAN PHYSIOLOGY
 Discusses selected advanced topics in human physiology. May be repeated for credit as topics change each time course is offered.
 Prerequisites: BIOL& 241 or concurrent enrollment.

Blueprint (BLPT)

BLPT 150 W 5 credits
MACHINISTS BLUEPRINT READING RE
 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.
 Prerequisite: None

BLPT 160 Sp 5 credits
BLUEPRINT READING FOR WELDERS RE
 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 (BUS)

BUS& 101 S,F,W,Sp 5 credits
INTRO 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.(Formerly known as BSAD 110)
 Prerequisite: None

BUS 104 F,W,Sp 5 credits
BUSINESS MATH APPLICATIONS RE
 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. (Formerly known as BSAD 104)
 Prerequisite: MATH 078/079 or TECH 078/079 with a grade of C or better or instructor permission.

BUS 118 5 credits
ETHICS IN MANAGEMENT E
 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. (Formerly known as BSAD 135)
 Prerequisite: None

BUS 119 F,W,Sp 5 credits
BUSINESS COMMUNICATIONS RE
 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. (Formerly known as BSAD 190)
 Prerequisite: ENGL 099 (was ENGL 100) or TECH 105 with a grade of C or better or placement test into ENGL& 101.

BUS 144 S,F,W,Sp 5 credits
MANAGEMENT OF HUMAN RELATIONS:DIV E,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.
 Prerequisites: None

BUS 150 **S,F,W,Sp** **5 credits**
CUSTOMER SERVICE/MANAGEMENT **E,D**
 Introduces the philosophy of service excellence as it pertains to organizations in today's business environment. Emphasis is 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, in the pluralistic workplace. Students will learn to identify the challenges and advantages of a diverse workforce and diverse customer base.
 Prerequisite: none

BUS 159 **F,Sp** **5 credits**
PRINCIPLES OF RETAILING **RE**
 Surveys retailing principles and concepts and studies store management, merchandise management, pricing, customer services, advertising, and display.
 Prerequisite: None

BUS 165 **W** **5 credits**
SALESMANSHIP **RE**
 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. (Formerly known as BSAD 115)
 Prerequisite: None

BUS& 201 **S,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.
 Prerequisites: ENGL& 101 OR BUS 119, or equivalent, with a grade of C or better, or instructor permission.

BUS 206 **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 (was BSAD 206) and MATH 210. (Formerly known as BSAD 206)
 Prerequisites: MATH 098/099 or TECH 098/099 or MATH 087/097 with a grade of C or better.

BUS 207 **NS** **3 credits**
STATISTICAL PROJECTS
 Provides an opportunity for students to apply the statistical processes learned in MATH 210/BUS 206 (was BSAD 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 (was BSAD 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 **E**
 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. (Formerly known as BSAD 240)
 Prerequisite: None

BUS 244 **W** **5 credits**
HUMAN RESOURCE MANAGEMENT **E**
 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).
 Prerequisite: None

BUS 245 **Sp** **5 credits**
PRINCIPLES OF MANAGEMENT **E**
 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. (Formerly known as BSAD 275)
 Prerequisite: None

BUS 259 **Sp** **5 credits**
STARTING/MANAGING A SMALL BUSINESS **RE**
 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. (Formerly known as BSAD 111)
 Prerequisite: ACCT 101, BUS& 101 (was BSAD 110), and CS 121 (was CIS 120) with a grade of C- or better, or instructor permission.

BUS 264 **W** **5 credits**
PRINCIPLES OF MARKETING **E**
 Presents marketing functions and their roles in the economic process, emphasizing marketing systems, product planning, promotion, and sales. (Formerly known as BSAD 263)
 Prerequisite: BUS& 101 (was BSAD 110) or instructor permission.

BUS 265 **5 credits**
ADVERTISING **E**

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. (Formerly known as BSAD 270)
Prerequisite: None

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.
Prerequisites: CS 121 and BUS 144 with a grade of C or better, or instructor permission.

BUS 294 **F,W,Sp** **2 credits**
CAREER SUCCESS **RE**

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.

Business Technology (BTEC)

BTEC 100 **S,F,W,Sp** **1-3 credits**
COMPUTER KEYBOARDING **RE**

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.
Prerequisite: None

BTEC 104 **F,W** **5 credits**
INTRODUCTION TO BUSINESS TECHNOLOGY **RE**

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.
Prerequisite: None

BTEC 105 **S,F,W,Sp** **1-4 credits**
KEYBOARDING **SPEED AND ACCURACY** **RE**

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 **1 credit**
MICROSOFT OFFICE UPGRADE **RE**

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**
WORD PROCESSING I **RE**

Utilizes Microsoft Word features to format, edit, maintain, merge, and reference business documents. Includes creating tables and using SmartArt graphics.
Prerequisites: 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**
WORD PROCESSING II **RE**

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.
Prerequisites: 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 **S,F,W,Sp** **1-2 credits**
ELECTRONIC CALCULATORS **RE**

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.
Prerequisite: None.

BTEC 144 **S,F,W,Sp** **1 credit**
ONENOTE FUNDAMENTALS **RE**

Introduces the electronic note-taking and information management application, Microsoft OneNote. Topics include using this application to gather, format, organize, and share information.
Prerequisite: None

BTEC 145 **S,F,W,Sp** **1-5 credits**
INTRODUCTION TO MS WORD **RE**

Introduces students to Microsoft Word features that may be used in both personal and business environments. Topics include basic and intermediate-level document formatting. This class is offered in a lab environment.
Prerequisite: BTEC 100 or instructor permission.

BTEC 146 S,F,W,Sp 1-2 credits
POWERPOINT FUNDAMENTALS RE
 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.
 Prerequisite: None

BTEC 147 S,F,W,Sp 1-3 credits
INTRODUCTION TO DESKTOP PUBLISHING RE
 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.
 Prerequisites: CS 110 or BTEC 104 with a grade of C or better or instructor permission.

BTEC 148 S,F,W,Sp 2 credits
INTRODUCTION TO OUTLOOK RE
 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.
 Prerequisite: None

BTEC 149 S,F,W,Sp 1 credit
INTERNET FUNDAMENTALS RE
 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. (Formerly known as CS 108)
 Prerequisite: None

BTEC 150 S,F,W,Sp 1-3 credits
INTRODUCTION TO GOOGLE APPLICATIONS RE
 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.
 Prerequisites: None

BTEC 155 3 credits
WEBSITE MANAGEMENT RE
 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.
 Prerequisites: BTEC 104 or CS 110 or BTEC 149 or Instructor Permission

BTEC 156 3 credits
INTRO TO MS VISIO
 Introduces the use of professional and technical flowchart diagramming software for business applications.
 Prerequisites: CS 110 or BTEC 104 with a C or better, or instructor permission.

BTEC 157 3 credits
INTRO TO MS PROJECT
 Introduces the use of project management software to manage timelines, resources, tasks and budgets. Provides practical experience in using the software to measure progress and anticipate resource needs for business decisions.
 Prerequisites: CS 110 or BTEC 104 with a C or better, or Instructor Permission

BTEC 161 F 5 credits
INTRO TO ICD-10 CODING IN MEDICAL OFFICE-PART I RE
 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
INTRO TO ICD-10 CODING IN MEDICAL OFFICE-PART II RE
 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 RE
 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.
 Prerequisites: BTEC 162 with grade C or better or instructor permission.

BTEC 164 S,F,W,Sp 1-2 credits
LEGAL ASPECTS OF THE MEDICAL OFFICE RE
 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.
 Prerequisite: None

BTEC 165 S,F,W,Sp 3 credits
CULTURAL AWARENESS FOR CARE
PROFESSIONALS RE

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.
 Prerequisite: None

BTEC 171 F 3 credits
MEDICAL RECEPTION PROCEDURES RE

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. This may be taken as a stand-alone course for students in the Medical Reception certificate program. It also serves as the first in a three-part series required for AAS in Medical Administrative Support, COP in Medical Billing & Coding, AAS/COP in Medical Assisting.
 Prerequisites: ENGL 099 (was ENGL 100) or higher.

BTEC 172 W 3 credits
MEDICAL OFFICE PROCEDURES RE

Provides instruction and practice for advanced administrative support skills in the medical office. Topics include: payroll, banking, fee schedules, credit and collections, patient and insurance billing, bookkeeping, and coding. This course is the second in a three-part series for the Associate of Applied Science degree in Administrative Support or Medical Assisting. It is also required for the certificate of proficiency in Medical Assisting.
 Prerequisites: ENGL 099 (was ENGL 100) 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.

BTEC 173 Sp 3 credits
COMPUTERS IN THE MEDICAL OFFICE RE

Introduces computer software programs and electronic health records used in healthcare practice management. Prepares students to complete administrative tasks in healthcare, including bookkeeping, billing, claims submission, appointment scheduling. Presents various functions completed in electronic health records. This course is the third in a three-part series required for the Associate of Applied Science degree in Medical Assisting or Administrative Support. It is also a requirement for the Medical Assisting certificate of proficiency.
 Prerequisites: BTEC 172 with grade C or better.

BTEC 181 S,F,W,Sp 3 credits
MEDICAL TERMINOLOGY I RE

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.

Prerequisite: None

BTEC 182 S,F,W,Sp 3 credits
MEDICAL TERMINOLOGY II RE

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 260 Sp 5 credits
OFFICE PROCEDURES RE

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.
 Prerequisites: 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 RE

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 5 credits
INTRODUCTION TO ADDICTIONS & CHEMICAL
DEPENDENCY SS

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.
 Prerequisite: None.

CDS 102 W 3 credits
INTRO TO THEORIES AND COUNSELING OF CD
CLIENTS RE

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
CHEMICAL DEPENDENCY/DOMESTIC VIOLENCE RE

Provides students with a basic understanding of social problems and legal issues relative to domestic violence and its impact on children and families.

Prerequisite: None

CDS 107 Sp 3 credits
ADOLESCENT DEVELOPMENTAL ISSUES AND CHEM DEPEND RE

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. Formerly known as CDS 207.

Prerequisite: None.

CDS 108 F 4 credits
COMMUNITY & SCHOOL-BASED PREVENTION/ INTERVENTION RE

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.

Prerequisites: None

CDS 110 Sp 3 credits
ALCOHOL/DRUG PATHOPHYSIOLOGY AND PHARMACOLOGY RE

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. (Formerly known as CDS 211)

Prerequisite: CDS 101, 102, and 113 all with a grade of C or better.

CDS 111 Sp 3 credits
RECORDKEEPING AND CASE MANAGEMENT RE

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 3 credits
TREATMENT PRINCIPLES OF CHEMICAL DEPENDENCY RE

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.

Prerequisites: Previous completion of or concurrent enrollment in CDS 101.

CDS 114 W 2 credits
SUICIDE ASSESSMENT, PREVENTION & CRISIS MGMNT RE

Presents methods for assessing suicide risk, intervention techniques, and suicide prevention strategies. Explores crisis management methods. Discusses the legal issues involved in suicide prevention.

Prerequisites: None

CDS 121 W 3 credits
LEGAL AND ETHICAL ISSUES IN CDS RE

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.

Prerequisite: None

CDS 201 Sp 3 credits
DYNAMICS OF THE FAMILY & CHEMICAL DEPENDENCY RE

Introduces students to the dynamics of the chemically dependent family. Studies the effects of addiction on the family. ACOA (adult children of alcoholics) issues will be addressed. Education and treatment strategies will be explored. Students must enroll concurrently in CDS 111, and either enroll concurrently in CDS 110 or obtain instructor permission.

Prerequisite: CDS 101, 102, 113 and 215 with a C or better.

CDS 202 F 3 credits
CHEM DEPENDENCY COUNSELING/DIVERSE POPULATIONS RE

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** **3 credits**
RELAPSE PREVENTION AND INTERVENTION RE
 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** **3 credits**
GROUP COUNSELING: THEORIES AND APPLICATION RE
 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** **3 credits**
CO-OCCUR DISORDERS:MENTAL HLTH RE
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 **3 credits**
COMPULSIVE SEXUAL BEHAVIOR RE
 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.
 Prerequisite: None

Chemistry (CHEM)

CHEM&100 **S,F,W,Sp** **5 credits**
PREPARATORY CHEMISTRY NS
 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. (Formerly known as CHEM 100)
 Prerequisite: None

CHEM&110 **S,F,W,Sp** **5 credits**
CHEMICAL CONCEPTS W/LAB NSL
 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. (Formerly known as CHEM 105)
 Prerequisite: Completion of or concurrent enrollment in MATH 078/079 or TECH 078/079.

CHEM&121 **S,F,W,Sp** **5 credits**
INTRO TO CHEMISTRY NSL
 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. (Formerly known as CHEM 111)
 Prerequisite: CHEM& 100 or CHEM& 110 or one year of high school chemistry, and completion of, or concurrent enrollment in MATH 088 or TECH 088; or MATH 087.

CHEM&131 **Sp** **5 credits**
INTRO TO ORGANIC/BIOCHEM NSL
 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. (Formerly known as CHEM 112)
 Prerequisite: CHEM& 121 (was CHEM 111) or CHEM& 161 (was CHEM 151).

CHEM&161 **F** **5 credits**
GENERAL CHEM W/LAB I NSL
 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.
 Prerequisites: CHEM& 100 or high school chemistry and MATH 099 or TECH 099.

CHEM&162 **W** **5 credits**
GENERAL CHEM W/LAB II NSL
 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.
 Prerequisites: CHEM& 161 AND MATH 099 or TECH 099

CHEM&163 **Sp** **5 credits**
GENERAL CHEM W/LAB III **NSL**

Examines, in more detail, equilibrium, thermodynamics, and descriptive chemistry of elements and their compounds. Topics in kinetics and equilibrium are revisited to enhance students' comprehension and understanding. The course ends with a survey of several areas of chemistry including coordination chemistry, nuclear and radiochemistry, nanochemistry, organic chemistry, and biochemistry with special emphasis on relevant and inspiring aspects of these topics. Laboratory is included.

Prerequisites: : CHEM& 162 AND MATH 099 or TECH 099

CHEM 231 **Sp** **5 credits**
QUANTITATIVE ANALYSIS **NSL**

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 (was CHEM 153).

CHEM&261 **F** **5 credits**
ORGANIC CHEM W/LAB I **NSL**

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. (Formerly known as CHEM 251)

Prerequisite: CHEM& 163 (was CHEM 153) or instructor permission.

CHEM&262 **W** **5 credits**
ORGANIC CHEM W/LAB II **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 alkyl halides, alcohols, aldehydes, ketones, and other groups of compounds. Reactions and synthesis of various compounds of these families will be studied 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. (Formerly known as CHEM 252)

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. (Formerly known as CHEM 253)

Prerequisite: CHEM& 262 (was CHEM 252).

Chinese (CHIN)

CHIN&121 **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.

Prerequisite: None

CHIN&122 **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.

Prerequisites: None

CHIN&123 **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.

Prerequisite: None

College Success (COLL)

COLL 093 **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. (Formerly known as INDV 093)

Prerequisite: None

COLL 094 **1 credit**
NOTETAKING

Prepares students to effectively take lecture notes. Techniques include active listening, looking for main ideas, using signal words, and organizing notes. (Formerly known as INDV 094)

Prerequisite: None

COLL 095 **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.
 Prerequisite: None

COLL 096 **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. (Formerly known as INDV 096)
 Prerequisite: None

COLL 100 **5 credits**
COLLEGE SUCCESS **RE**
 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 **S,F,W,Sp** **2 credits**
FIRST YEAR SEMINAR I **RE**
 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. This course is a placement requirement for students who test into ENGL 098, and is open to all students.
 Prerequisites: None

COLL 102 **S,F,W,Sp** **2 credits**
FIRST YEAR SEMINAR II **RE**
 Further explores foundational issues for success in college with an emphasis on career and life planning. Students will create a comprehensive academic plan that includes the exploration of three career options, a sample scholarship essay, STARS navigation, financial literacy, intended program and timeline for completion. This course is a placement requirement for students who test into ENGL 098, and is open to all students.
 Prerequisites: Completion of COLL 101

COLL 103 **2 credits**
FIRST YEAR SEMINAR III **RE**
 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.
 Prerequisites: COLL 102

COLL 104 **1 credit**
COLLEGE KNOWLEDGE **RE**
 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.
 Prerequisite: None

COLL 105 **1-5 credits**
CAREER PLANNING AND EXPLORATION
 Launches students into an investigation of interests, values, and careers, followed by decision-making and goal setting. Prerequisite: None

Computer Science (CS)

CS 100 **S,F,W,Sp** **5 credits**
INTRODUCTION TO INFORMATION SYSTEMS **E**
 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. (Formerly known as CIS 100)
 Prerequisite: None.

CS 102 **W,Sp** **5 credits**
INTRODUCTION INTERNET THEORY/APP/WEB PAGE DESIGN **RE**
 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 **RE**
 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 (was CIS 102), CS 170 (was CIS 180) or equivalent, or instructor permission.

CS 110 **S,F,W,Sp** **3 credits**
INTRODUCTION TO MICROCOMPUTER APPLICATIONS **E**
 Introduces the student to microcomputers and software applications. Windows, word processing, and electronic spreadsheets basics are presented. (Formerly known as CIS 110)
 Prerequisite: Ability to use a keyboard

CS 111 **F,W,Sp** **4 credits**
INTRODUCTION TO WINDOWS **RE**
 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). (Formerly known as CIS 150)
 Prerequisite: None

CS 121 **5 credits**
INTRODUCTION TO SPREADSHEETS **E**
 Introduces the use of spreadsheet programs in business applications. Provides practical experience in using a spreadsheet to solve common business problems.
 Prerequisites: BTEC 104 or CS 110, and MATH 089 or TECH 089 or BUS 104 or MATH 097, or instructor permission.

CS 122 **5 credits**
ADVANCED SPREADSHEET APPLICATIONS **E**
 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 **5 credits**
INTRODUCTORY DATABASE APPLICATIONS **E**
 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. (Formerly known as CIS 130)
 Prerequisite: CS 121 (was CIS 120) with a grade of C or better, or instructor permission.

CS 141 **F,W** **5 credits**
PC TECHNICIAN I **RE**
 Provides an overview of the roles of the PC technician. Prepares students for PCPro and CompTIAA 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.

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 **RE**
 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.
 Prerequisites: CS 141 and MATH 089 or MATH 097 or instructor permission with a grade of C or better.

CS 143 **Sp** **5 credits**
CONFIGURING WINDOWS OPERATING SYSTEMS **RE**
 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 **E**
 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.
 Prerequisites: MATH 089 or TECH 089 or MATH 097 with a grade of C or better and knowledge of Windows is required; or instructor permission.

CS 175 **5 credits**
EVENT-DRIVEN PROGRAMMING **E**
 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. (Formerly known as CIS 185)
 Prerequisite: CS 170 (was CIS 180) with a grade of C or better, or instructor permission.

CS 208 **W** **5 credits**
INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS **E**
 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. (Formerly known as CIS 260)
 Prerequisite: BUS& 101 (was BSAD 110), ENGL& 101, or instructor permission. CS 110 (was CIS 110) recommended.

CS 211 **F** **5 credits**
NETWORKING BASICS **E**
 Prepares students for TestOut'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**
LAN:CONFIGURING WINDOWS SERVIER ACTIVE DIRECTORY **E**
 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.
 Prerequisites: CS 211 with a grade of C or better or instructor permission.

CS 213 **Sp** **5 credits**
LAN:CONFIGURING WINDOWS SERVER NETWORK INFRASTR **E**
 Prepares students for the Microsoft Technology Specialist exam: Windows Server Network Infrastructure Configuring. Focuses on the details of configuring the infrastructure of a network.
 Prerequisites: CS 212 with a grade of C or better or instructor permission.

CS 230 **F** **5 credits**
DATABASE DEVELOPMENT **RE**
 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. (Formerly known as CIS 230)
 Prerequisite: CS 130 (was CIS 130) with a grade of C or better or instructor permission.

CS 249 **W** **5 credits**
LINUX OPERATING SYSTEMS **RE**
 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 work place prior to attempting the Linux+ exam.
 Prerequisites: CS 143 and CS 211 each with a grade of C or better, or instructor permission.

CS 260 **Sp** **5 credits**
INFO TECH SECURITY **RE**
 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.
 Prerequisites: CS 211 with a grade of C or better, or instructor permission.

CS 270 **F** **5 credits**
DATA STRUCTURES I **E**
 Offers a detailed study of structured and object-oriented programming, including algorithms, searching and sorting, and data structures using the programming language C++. (Formerly known as CIS 280)
 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 **E**
 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. (Formerly known as CIS 285)
 Prerequisite: CS 170 (was CIS 180) with a grade of C or better, or instructor permission.

CS 280 **Sp** **5 credits**
ADVANCED DATA STRUCTURES **RE**
 Offers a detailed study of advanced data structures, including the analysis of algorithms and object-oriented programming using the programming language C++. Prerequisites: CS 270 and MATH& 141 (was MATH 112), both with a grade of C or better, or instructor's permission.

CS 281 **F** **5 credits**
DIGITAL DESIGN AND COMPUTER ORGANIZATION **E**
 Introduces elementary digital logic design and the organization of computers.
 Prerequisites: MATH& 141 (was MATH 112) and CS 270, both with a grade of C or better, or instructor permission.

CS 282 **W** **5 credits**
ASSEMBLY LANGUAGE PROGRAMMING(WAS
MICROPROCESS.) **E**

Introduces protected-mode assembly language programming. Covers assembly language concepts and code in the context of either "C" or C++.

Prerequisites: CS 281 with a grade of C or better, or instructor permission.

CS 285 **S** **5 credits**
PROGRAMMING TOOLS **E**

Covers tools and techniques which facilitate programming and debugging, including debuggers, profilers, scripting, and C and C++ programming under the Linux operating system. Formerly known as CIS 235.

Prerequisite: CS 270 (was CIS 280) with a grade of C or better, or instructor permission.

Criminal Justice (CJ)

CJ 100 **15 credits**
BASIC LAW ENFORCEMENT **E**

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. (Formerly known as ADMJ 100)

Prerequisite: None

CJ& 101 **F** **5 credits**
INTRO 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. (Formerly known as ADMJ 186)

Prerequisite: None

CJ& 110 **F** **5 credits**
CRIMINAL LAW **E**

Introduces substantive criminal law including basic principles of criminal liability in crimes against persons and property, constitutional basics as applied to criminal laws, defenses and accomplice liability. Elements of specific crimes as seen within criminal statutes and basic criminal procedure illustrated in the legal system are covered as well as analysis of court decisions interpreting statutes. The sociological basis for changes in criminal law are also considered.

Prerequisites: ENGL& 101 with a grade of C or higher or instructor permission.

CJ 154 **W** **5 credits**
AMERICAN LEGAL SYSTEM **E**

Introduces students to the history and evolution of the federal and state constitutional basis of law, how the court systems within the united States work separately and together, and how the various components and occupations within our legal system function. Sociological reasons for the development of our legal system are also explored.

Prerequisites: ENGL& 101 with a grade of C or higher or instructor permission.

CJ 180 **W** **5 credits**
REPORT WRITING FOR LAW ENFORCEMENT **E**

Covers the procedures of field note-taking, crime scene recording, preliminary investigation methods for writing law enforcement reports and fundamentals of police record systems. Prepares the student to write effective and concise reports, using observation, note-taking and excellent writing skills.

Prerequisites: ENGL& 101 with a grade of C or higher or instructor permission.

CJ 184 **W** **5 credits**
ADMINISTRATION OF JUSTICE **E**

Introduces students to the history, evolution, components and function of criminal procedure in the united States courts, from arrest through the appeals process, and touching on victim's rights. Gives students a perspective of the complexities and intricacies of criminal procedure and punishment in light of sociological norms and change, the U.S. Constitution, state and federal statutes, rules and practice.

Prerequisites: ENGL& 101 with a grade of C or higher or instructor permission.

CJ 185 **Sp** **5 credits**
COMMUNITY POLICING **E**

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.

Prerequisite: None

CJ 187 **3 credits**
CRISIS INTERVENTION FOR PROFESSIONALS **E**

Provides a basic multidisciplinary understanding of what a mental disorder/illness is and how to help a person experiencing a mental health crisis. De-escalation and communication techniques specific to professions such as education, medicine, and law enforcement - anyone who may encounter persons experiencing a mental health crisis - will be the focus of lecture and group discussions.

Prerequisites: None

CJ 260 **Sp** **5 credits**
PHYSICAL EVIDENCE AND CRIMINALISTICS **E**
 Studies collection and preservation of physical evidence, scientific aids, modus operandi, and crime scene search and includes examination of physical evidence and evaluation of findings in terms of legal questions involved. The course also surveys problems relating to homicide, drugs, arson, and burglary. (Formerly known as ADMJ 260)
 Prerequisite: None

CJ 286 **5 credits**
CRIMINAL LAW ADMINISTRATION **E**
 Provides a study of legal limitations on law enforcement practices and procedures, including analysis of eye-witness identification procedures, criminal interrogations and confessions, the law of arrest, the exclusionary rule, search and seizure, and the constitutional limitations on legislative power to create and define criminal offenses. (Formerly known as ADMJ 286)
 Prerequisite: None

Dance (DANCE)

DANCE100 **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, body toning, strength and flexibility as well as rhythmic awareness.
 Prerequisite: None

DANCE105 **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, body toning, strength, flexibility, and rhythmic awareness. Prior dance experience is not necessary.
 Prerequisite: None.

DANCE110 **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.
 Prerequisite: None

DANCE151 **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 1 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.
 Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

DANCE152 **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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 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.
 Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

DANCE153 **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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 times. This course will transfer to any four-year institution as an Elective or a Humanities credit.
 Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

DANCE197 S 1-5 credits
REHEARSAL AND PERFORMANCE I E,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.

DANCE251 1.5 credits
SHOW DANCE IV H,P

Distinguish 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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 times. This course will transfer to any four-year institution as an Elective or a Humanities credit.

Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

DANCE252 1.5 credits
SHOW DANCE 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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 times. This course will transfer to any four-year institution as an Elective or a Humanities credit.

Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

DANCE253 1.5 credits
SHOW DANCE 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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 times. This course will transfer to any four-year institution as an Elective or a Humanities credit.

Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

Diesel and Heavy Equipment Technology (DHET)

DHET 100 F 5 credits
ESSENTIALS OF MECHANICS RE

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. (was ADT 100)

Prerequisite: None

DHET 101 W 5 credits
ELECTRICAL SYSTEMS I RE

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. (was ADT 101)

Prerequisite: None

DHET 102 W 10 credits
ELECTRICAL SYSTEMS II RE

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. (was ADT 102)

Prerequisite: DHET 101 or instructor permission.

DHET 104 Sp 8 credits
VEHICLE CLIMATE CONTROL RE

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.

Prerequisites: DHET 102 or instructor permission.

DHET 111 HYDRAULIC BRAKES	Sp	5 credits RE
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. (was ADT 111) Prerequisite: None		
DHET 115 AIR BRAKE SYSTEMS	Sp	5 credits RE
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. Prerequisite: None		
DHET 125 HEAVY DUTY CHASSIS MAINTENANCE	Sp	5 credits RE
Offers training in the repair, maintenance, and diagnosis of heavy equipment frames, steering, suspension, wheels, tires and undercarriage. Prerequisite: None		
DHET 141 HYDRAULICS I	F	5 credits RE
Presents the basic principles, operation, and maintenance of mobile hydraulic systems. Topics include: Fluids, Filters, and Fluid conductors. This is the first of a required two-course sequence for diesel students, or it can be used as a stand-alone course for those desiring a more in-depth look at the basics of mobile hydraulics. Prerequisites: None.		
DHET 142 HYDRAULICS II	F	6 credits RE
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 DIESEL ENGINE REBUILD	W	16 credits RE
Studies the operation, maintenance, repair, and overhaul of diesel engines used in heavy equipment. Required course for all Diesel/Heavy Equipment Technology majors. (was ADT 223) Prerequisite: DHET 100.		
DHET 215 HEAVY DUTY ENGINE PERFORMANCE	F	15 credits RE
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. (was ADT 226) Prerequisite: DHET 102 or instructor permission.		
DHET 216 AUTO/DIESEL TUNE UP AND PERFORMANCE	F	5 credits RE
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 HEAVY DUTY POWER TRAINS	Sp	10 credits RE
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. (was ADT 206) Prerequisite: None		

DHET 228 TRUCK DRIVING/TECHNICIAN		1-4 credits RE
Provides instruction to prepare students for the Washington State Class A commercial driver's license exam. 2-credit option is intended for students who have already received a portion of the required classroom training in truck systems. 4-credit option provides the Washington State required 40 hours of classroom training for individuals who have not completed the required classroom training in truck systems. Prerequisites: None.		

DHET 229 COMMERCIAL TRUCK DRIVING OPERATION		6 credits
Provides the required 120 hours of truck driving skill development to prepare students for the Washington State Class A commercial driver's license exam. Prerequisites: DHET 228. Student must have DOT physical and pass the DOT alcohol and substance abuse test. Student must have a commercial learner's permit.		

DHET 230 ADVANCED SHOP PRACTICES	Sp	5 credits RE
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 TECHNICAL GRAPHICS	S,F,W,Sp	1-3 credits RE
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. Prerequisite: None		

DRFT 151 S,F,W,Sp 1-3 credits
INTRO TO CAD RE

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 210 S,F,W,Sp 1-3 credits
ADV TECHNICAL GRAPHICS RE

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 (was ENGR 111).

DRFT 252 S,F,W,Sp 3 credits
3D COMPUTER AIDED DRAFTING RE

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 S,F,W,Sp 3 credits
SURVEY OF CIVIL AND ARCHITECTURAL GRAPHICS RE

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 (was ENGR 111) or instructor permission.

Drama (DRMA)

DRMA&101 5 credits
INTRO TO THEATRE

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.

Prerequisite: None.

DRMA 106 5 credits
INTRODUCTION TO ACTING I

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. (Formerly known as DRAM 106)

Prerequisite: None

DRMA 107 W 5 credits
INTRODUCTION TO ACTING II 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. (Formerly known as DRAM 107)

Prerequisite: None

DRMA 108 Sp 5 credits
INTRODUCTION TO ACTING 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. (Formerly known as DRAM 108)

Prerequisite: None

DRMA 116 F,W,Sp 5 credits
STAGE CRAFTS I E

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. (Formerly known as DRAM 116)

Prerequisite: None

DRMA 117 STAGE CRAFTS II	F,W,Sp	5 credits E
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. (Formerly known as DRAM 117) Prerequisite: None		
DRMA 118 STAGE CRAFTS III	F,W,Sp	5 credits E
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. Each course (DRMA 116, 117, 118) may be taken separately or in sequence; together they complete a basic study of technical theatre. Center Stage production for the quarter is used to apply technical aspects of stagecrafts to the play. Serving on the stage crew for the production is required. Prerequisite: None		
DRMA 119 INTRODUCTION TO THEATRE DESIGN AND TECHNOLOGY		5 credits E
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. Prerequisite: None		
DRMA 147 AUDITION TECHNIQUES		2 credits E
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. Prerequisite: None		

DRMA 196 REHEARSAL AND PERFORMANCE I	F	1-5 credits E
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. (Formerly known as DRAM 196) Prerequisite: None		
DRMA 197 REHEARSAL AND PERFORMANCE II	S,W	1-5 credits E
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. (Formerly known as DRAM 197) Prerequisite: None		
DRMA 198 REHEARSAL AND PERFORMANCE III	Sp	1-5 credits E
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. (Formerly known as DRAM 198) Prerequisite: None		
DRMA 206 ACTING I	F	5 credits E
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. (Formerly known as DRAM 206) Prerequisite: None		
DRMA 207 ACTING II	W	5 credits E
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. (Formerly known as DRAM 207) Prerequisite: None		
DRMA 208 ACTING III	Sp	5 credits E
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. (Formerly known as DRAM 208) Prerequisite: None		

DRMA 210 **5 credits**
MASKS **E**

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. (Formerly known as DRAM 210)
Prerequisite: None

DRMA 296 **F** **1-5 credits**
REHEARSAL AND PERFORMANCE IV **E**

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. (Formerly known as DRAM 296)
Prerequisite: None

DRMA 297 **S,W** **1-5 credits**
REHEARSAL AND PERFORMANCE V **E**

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. (Formerly known as DRAM 297)
Prerequisite: None

DRMA 298 **Sp** **1-5 credits**
REHEARSAL AND PERFORMANCE VI **E**

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. (Formerly known as DRAM 298)
Prerequisite: None

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 078 required.
Prerequisite: None

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 087 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 097 required.
Prerequisite: MATH 087 or 089 with a grade of C or higher.

ECED&100 **S,W** **3 credits**
CHILD CARE BASICS **RE**

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 **S** **5 credits**
INTRO EARLY CHILD ED **E**

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. Formerly known as: ECED 130
Prerequisites: None

ECED&107 **F** **5 credits**
HEALTH/SAFETY/NUTRITION **RE**

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. Formerly known as: ECED 115
Prerequisites: None

ECED 116 **F** **1 credit**
GUIDING BEHAVIOR OF YOUNG CHILDREN **E**

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.
Prerequisite: None

ECED 117 THE ENCOURAGING CLASSROOM	W	1 credit	E
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. Prerequisite: None			
ECED 118 POSITIVE GUIDANCE	Sp	1 credit	E
Focuses on positive communication and direct guidance techniques to support children's social/emotional development and strategies for specific challenging behaviors. Prerequisite: None			
ECED&120 PRACTICUM-NURTURING REL	F,Sp	2 credits	RE
Applies theories of best practice in an early learning setting. Focuses on developing supportive relationships while keeping children healthy and safe. Prerequisites: none			
ECED 127 PRACTICUM II/CURRICULUM	W	3 credits	E
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&190 with a grade of C or better, or instructor permission.			
ECED 128 PRACTICUM III/LEARNING STORIES	Sp	3 credits	E
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&190 and ECED 127 with a grade of C or better, or instructor permission.			
ECED&132 INFANTS/TODDLER CARE	W	3 credits	RE
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. Prerequisites: None			

ECED&134 FAMILY CHILD CARE	S	3 credits	RE
Presents the basics of home/family child care program management. Topics include: licensing requirements; business management; relationship building; health, safety & nutrition; guiding behavior and; promoting growth and development. Prerequisites: none			
ECED 136 INFANT/TODDLER SOCIAL & EMOTIONAL DEVELOPMENT	F	1 credit	RE
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. Prerequisite: None. Formerly known as: ECED 106			
ECED 137 INFANT/TODDLER ENCOURAGING HEALTHY PHYSICAL DEV	W	1 credit	RE
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. Prerequisite: None Formerly known as: ECED 107			
ECED 138 INFANT/TODDLER RESPONSIVE LEARNING ENVIRONMENT	Sp	1 credit	RE
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. Prerequisite: None Formerly known as: ECED 108			
ECED&139 ADMIN EARLY LRNG PROG	W	3 credits	RE
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. Prerequisites: none			
ECED&160 CURRICULUM DEVELOPMENT	F	5 credits	RE
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. Formerly known as: ECED 215 Prerequisites: None			

ECED&170 **S** **3 credits**
ENVIRONMENTS-YOUNG CHILD **RE**
 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.
 Prerequisite: none

ECED&180 **Sp** **3 credits**
LANGUAGE & LITERACY DEVELOPMENT **E**
 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.
 Prerequisite: None

ECED 186 **S,F** **3 credits**
SOCIAL-EMOTIONAL GROWTH AND
SOCIALIZATION **RE**
 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.
 Prerequisite: None

ECED 187 **W** **3 credits**
COGNITIVE & LANGUAGE DEVELOPMENT-
INFANT&TODDLER **RE**
 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.
 Prerequisite: None

ECED 188 **Sp** **3 credits**
GROUP CARE FOR INFANTS & TODDLERS **RE**
 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.
 Prerequisite: None

ECED&190 **Sp** **3 credits**
OBSERVATION/ASSESSMENT **RE**
 Practice collecting and presenting observation data of children, teaching practices and learning centers in an early childhood setting.
 prerequisites: none

ECED 204 **W** **3 credits**
MUSIC AND MOVEMENT FOR YOUNG CHILDREN **E**
 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.
 Prerequisite: None

ECED 209 **1 credit**
EARLY CHILDHOOD MENTOR DEVELOPMENT **E**
 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, & COMPUTERS FOR YOUNG
CHILDREN **RE**
 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.
 Prerequisite: None

ECED 220 **W** **3 credits**
ARTS AND CRAFTS FOR YOUNG CHILDREN **E**
 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.
 Prerequisite: None

ECED 261 **F** **3 credits**
PRACTICUM IV/PRINCIPLES **R**
 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.
 Prerequisites: EDUC& 115, EDUC& 130, ECED& 105, ECED& 107, ECED& 120, ECED& 190, completed with a C or better and ENGL 099 (was ENGL 100)

ECED 262 **3 credits**
PRACTICUM V/PRACTICE **R**
 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 **3 credits**
PRACTICUM VI/PROFESSIONALISM **R**
 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.
 Prerequisites: ECED 262

Earth Science (ERSI)

ERSI 104 **F** **5 credits**
INTRO 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.
 Prerequisite: None

ERSI 105 **F,W,Sp** **5 credits**
EARTH SYSTEMS **NSL**
 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. Major concepts are drawn from astronomy, meteorology, oceanography, geography, geology, biology, and ecology. Human? s part, effects, and relationships within the global ecosystem and Earth Systems are analyzed, as well as our dependence and interconnections with natural resources. Includes lab.
 Prerequisite: None

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.
 Prerequisite: None.

Economics (ECON)

ECON 104 **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 **S,F,W,Sp** **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.
 Prerequisite: None.

ECON&201 **S,F,W,Sp** **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. (Formerly known as ECON 207 and ECON 205)
 Prerequisite: MATH 088 or TECH 088 or BUS 104 (was BSAD 104) and ENGL& 101 or BUS 119.

ECON&202 **F,W,Sp** **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. (Formerly known as ECON 206)
 Prerequisite: ECON& 201 (was ECON 205) with a grade of C or better

Education (EDUC)

EDUC&115 **F** **5 credits**
CHILD DEVELOPMENT **RE**
 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. Formerly known as: EDUC& 114
 Prerequisites: none

EDUC 119 **W** **2 credits**
CURRICULUM & INSTRUCTION **RE**
 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. (Formerly known as EDUC 114)
 Prerequisite: None

EDUC&130 **F** **3 credits**
GUIDING BEHAVIOR **RE**
 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.
 Prerequisite: Nne

EDUC&136 **F** **3 credits**
SCHOOL AGE CARE **RE**
 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.
 Prerequisites: none

EDUC 140 **Sp** **3 credits**
EDUCATION AND THE LAW **RE**
 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
 Formerly known as: EDUC 115

EDUC&150 **S,F** **3 credits**
CHILD/FAMILY/COMMUNITY **E**
 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.
 Prerequisite: None

EDUC 191 **S,F** **1-3 credits**
INTRODUCTION TO TUTORING **E**
 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. (Formerly known as COLL 191 and INDV 191).
 Prerequisite: None.

EDUC&203 **S,W** **3 credits**
EXCEPTIONAL CHILD **RE**
 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. (Formerly known as ECED 210)
 Prerequisite: None

EDUC&205 **F,W,Sp** **5 credits**
INTRO ED W/FLD EXP:DIV **E**
 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.
 Prerequisite: None

EDUC 214 **Sp** **3 credits**
INSTRUCTIONAL STRATEGIES **RE**
 Provides an overview of the role of the teacher as facilitator. Includes instruction in knowledge and application of various classroom teaching techniques, lesson planning, and questioning skills. Provides a framework for understanding and applying fundamental elements and essential principles of instruction.
 Prerequisite: None

EDUC 215 **F** **3 credits**
CLASSROOM MANAGEMENT **RE**
 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.
 Prerequisite: None

Engineering (ENGR)

ENGR 106 **W,Sp** **3 credits**
ENGINEERING PROBLEMS **NS**
 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. (Formerly known as ENGR 121)
 Prerequisite: High school or 100-level physics or chemistry, or instructor permission. Concurrent enrollment in MATH& 142(was MATH 113).

ENGR&121 S,F,W,Sp 1-3 credits
ENGINEERING GRAPHICS I E
 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. (Formerly known as ENGR 111)
 Prerequisite: None

ENGR&122 S,F,W,Sp 1-3 credits
ENGINEERING GRAPHICS II E
 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. (Formerly known as ENGR 112)
 Prerequisite: ENGR& 121 (was ENGR 111) or instructor permission.

ENGR&123 S,F,W,Sp 1-3 credits
ENGINEERING GRAPHICS III E
 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& 121 (was ENGR 111) and ENGR& 122 (was ENGR 112) or instructor permission.

ENGR&204 6 credits
ELECTRICAL CIRCUITS E
 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.
 Prerequisites: PHYS 222, MATH& 152 and computer literacy.

ENGR 205 F 5 credits
DESIGN OF LOGIC CIRCUITS E
 Covers the design, analysis, and implementation of combinational logic circuits. Introduces sequential logic circuits.
 Prerequisites: MATH& 141

ENGR 206 W 5 credits
MICROPROCESSOR SYSTEMS E
 Covers microprocessor/microcontroller system architecture, instruction sets, interfacing, assembly and C language programming.
 Prerequisites: CS 270, ENGR 205

ENGR 210 5 credits
ENVIRONMENTAL PHYSICS OF ENERGY NS
 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.

ENGR&214 F 5 credits
STATICS E
 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. (Formerly known as ENGR 122)
 Prerequisites: MATH& 151 and either PHYS& 221 or ENGR 106.

ENGR&215 W 5 credits
DYNAMICS E
 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. (Formerly known as ENGR 261).
 Prerequisites: ENGR& 214 (was ENGR 122), MATH& 152 (was MATH 152) and PHYS& 221, or instructor permission.

ENGR&224 Sp 5 credits
THERMODYNAMICS E
 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. (Formerly known as ENGR 260)
 Prerequisite: ENGR& 214 (was ENGR 122), PHYS& 221, and MATH& 152 or instructor permission.

ENGR&225 **Sp** **5 credits**
MECHANICS OF MATERIALS **E**
 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. (Formerly known as ENGR 254)
 Prerequisite: ENGR& 214 (was ENGR 122), concurrent enrollment in MATH& 152, and PHYS 252 or instructor permission.

English (ENGL)

ENGL 065 **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. (Formerly known as INDV 065)
 Prerequisite: COMPASS score of 40-68 in reading.

ENGL 072 **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. (Formerly known as INDV 072)
 Prerequisite: None

ENGL 073 **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. Course designed for students needing a refresher course on essay-writing before entering, or concurrent with taking, ENGL 099 (was ENGL 100) or TECH 105.
 Prerequisites: None

ENGL 075 **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. (Formerly known as INDV 075)
 Prerequisite: COMPASS scores of 69-80 in reading or completion of ENGL 065 (was INDV 065) with a grade of C or better.

ENGL 090 **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.
 Prerequisite: None

ENGL 094 **1-3 credits**
SELF-PACED LEARNING 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.
 Prerequisites: None

ENGL 095 **1 credit**
VOCABULARY BUILDING
 Improves vocabulary skills for reading, writing, and speaking. Develops skills for determining the meaning of unfamiliar words. (Formerly known as INDV 095)
 Prerequisite: None

ENGL 096 **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.
 Prerequisite: None

ENGL 097 **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.
 Prerequisite: None

ENGL 098 **S,F,W,Sp** **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. Prerequisite: None
 Prerequisite: None Concurrent requirements: COLL 101 or COLL 102
 Concurrent requirements: COLL 101 or COLL 102

ENGL 099 **S,F,W,Sp** **1-5 credits**
COLLEGE-READY ENGLISH II
 Develops and refines additional 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. Prerequisites: ENGL 098 with a grade of C or better and COLL 101
 Prerequisites: ENGL 098 with a grade of C or better and COLL 101 Concurrent requirements: COLL 102
 Concurrent requirements: COLL 102

ENGL&101 **S,F,W,Sp** **5 credits**
ENGLISH COMPOSITION I **E**
 Introduces first-year college writing skills including thesis discovery, development, support, organization, sentence correctness, diction, style, formal academic documentation and final editing to compose claim-driven essays. Emphasizes analytical reading and the writing of analysis, synthesis, and argument essays. Part one of the composition sequence.
 Prerequisites: College level reading and writing skills or completion of ENGL 099 (was ENGL 100) or TECH 105 with a grade of C or better.

ENGL&102 **S,F,W,Sp** **5 credits**
COMPOSITION II **HA**
 Develops first-year college writing skills to compose claim-driven writing, including an 8-12 page researched argument essays. Emphasizes inquiry and research; synthesis and analysis; argumentation and reasoning; integration and documentation of evidence; and sentence correctness, diction, and style. Part two of the composition sequence.
 Prerequisites: ENGL& 101 with a grade of C or better.

ENGL 104 **1-2 credits**
ACCELERATED REVIEW OF GRAMMAR/PUNCTUATION **RE**
 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. (Formerly known as INDV 104)

ENGL 106 **2 credits**
NORTHWEST VOICES CREATIVE WRITING WORKSHOP **E**
 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.
 Prerequisites: None

ENGL 108 **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 (was ENGL 100) or TECH 105 concurrent or passed.

ENGL 110 **S,F,W,Sp** **5 credits**
INDUSTRIAL COMMUNICATION **E**
 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.
 Prerequisite: ENGL 099 with a grade of C or better

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 small press 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 small press 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 small press in print and electronic publication. Formerly known as ENGL 124.
 Pre requisite: ENGL 101 required; ENGL 231 or 234 recommended

ENGL 140 **F** **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 shape(d) their writing. Genres to be read will include poetry, short stories, non-fiction essays, and novels. Satisfies Diversity requirement. Prerequisite: ENGL 099 (was ENGL 100) or TECH 105 or college-level writing ability

ENGL 161 **3 credits**
SPEED READING **E**
 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. Prerequisite: None

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. Prerequisite: None

ENGL 205 **5 credits**
FILM AND DRAMA APPRECIATION **H**
 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 **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. Prerequisites: ENGL& 101 or instructor permission.

ENGL 221 **1-5 credits**
TEACHING AND TUTORING I **E**
 Provides instruction in writing center and composition theory, emphasizing theories on language and literacy acquisition, tutoring writing, and composition pedagogy (2+ credits). Includes hands-on practice tutoring writing in the LCC Learning Commons, paired with discussion and reflection (4+ credits). Introduces students to the practice of writing center research. Students enrolled for 4 or more hours must pass a background check. Prerequisites: ENGL& 101

ENGL 222 **1-5 credits**
TEACHING AND TUTORING II **RE**
 Deepens understanding of the concepts and skills from English 221. Applies concepts to a broader range of composition theory and tutoring experience. Prepares for a leadership role within a writing center environment by designing and implementing a lesson on tutoring writing. Continues writing center research skills. [Introduces academic authorship (5 credits only).] Students must pass a background check. Prerequisites: ENGL 221

ENGL 224 **F** **2 credits**
ARTS 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 small press in print and electronic publication. Prerequisite: ENGL 124 required; ENGL 231 recommended.

ENGL 225 **W** **2 credits**
ARTS MAGAZINE PUBLICATION V **H,P**
 Provides instruction and guidance for students editing the Lower Columbia College arts magazine, and examines the role of the literary small press in print and electronic publication. Prerequisite: ENGL 125 required; ENGL 231 recommended.

ENGL 226 **Sp** **2 credits**
ARTS 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 small press in print and electronic publication. Formerly known as ENGL 224. Prerequisite: ENGL 101 required; ENGL 231 or 234 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's 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's 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. (Formerly known as ENGL 220 or ENGR 220)
 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. Formerly known as ENGL 240.
 Prerequisite: ENGL& 101 or instructor permission.

ENGL 245 **Sp** **5 credits**
CONTEMPORARY LITERATURE: DIV **H,D**
 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 **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.
 Prerequisites: ENGL& 101 or instructor permission.

ENGL 251 **5 credits**
THRU 18TH CENTURY **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 **5 credits**
19TH CENTURY TO PRESENT **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**
SCIENCE-FICTION LITERATURE AND 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.
 Prerequisites: 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 **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 **S,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.
 Prerequisite: None

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 051 **1-20 credits**
ENGLISH LEVEL A
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning reading and writing course.
 Prerequisites: CASAS appraisal exam and CASAS appraisal score of 200 and below

ESL 061 **1-20 credits**
ENGLISH LEVEL B
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Low Intermediate Basic Education reading and writing course.
 Prerequisite: CASAS appraisal exam and CASAS appraisal score of 201-210

ESL 070 **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.
 Prerequisite: None

ESL 071 **1-20 credits**
ENGLISH LEVEL C
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a High Intermediate Basic Education reading and writing course.
 Prerequisites: CASAS appraisal exam and CASAS appraisal score of 211-220

ESL 081 **1-20 credits**
ENGLISH LEVEL D
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Low Adult Secondary Education reading and writing course.
 Prerequisite: CASAS appraisal exam and CASAS appraisal score of 221-235

ESL 091 **1-20 credits**
ENGLISH LEVEL E
 Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a High Adult Secondary Education reading and writing course.
 Prerequisites: CASAS appraisal exam and CASAS appraisal score of 236 and higher

Environmental Science (ENVS)

ENVS 150 **W** **5 credits**
ENVIRONMENT & SOCIETY **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.
 Prerequisite: None

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.
 Prerequisites: ENGL& 101 or consent of instructor, MATH 087 or MATH 088 or TECH 088.

Fire Science (FISC)

FISC 101 **S,F** **3 credits**
INTRODUCTION TO FIRE PROTECTION **RE**
 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.
 Prerequisite: None

FISC 105 **F** **3 credits**
FUNDAMENTALS OF FIRE PREVENTION **RE**
 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 building to locate hazards and recommend improvements. Students study fire prevention and education programs and conduct presentations.
 Prerequisite: None

FISC 109 **F** **3 credits**
FIRE SERVICE SAFETY **RE**
 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.
 Prerequisite: None

FISC 110 **F** **3 credits**
FIRE SCIENCE I **RE**
 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.
 Prerequisite: None

FISC 111 **F** **10 credits**
BASIC FIRE FIGHTING SKILLS **RE**
 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.
 Prerequisite: None

FISC 125 **Sp** **5 credits**
FIRE SERVICE RESCUE **RE**
 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 111 or instructor permission.

FISC 129 **Sp** **3 credits**
EMERGENCY INCIDENT MNGT **RE**
 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.
 Prerequisite: None

FISC 170 **W,Sp** **8 credits**
EMERGENCY MEDICAL TECHNICIAN B **RE**
 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 B.
 Prerequisites: MEDA 101 or BTEC 181 or concurrent enrollment with a C or better.

FISC 205 **W** **3 credits**
FIRE INVESTIGATION AND CAUSE DETERMINATION **RE**
 Studies burning characteristics of combustibles. Interprets clues and burn patterns leading to point of origin. Identifies incendiary indications, sources of ignition and materials ignited, and how to preserve the fire scene evidence.
 Prerequisite: None

FISC 206 **Sp** **3 credits**
HAZARDOUS MATERIALS **RE**
 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.
 Prerequisite: None

FISC 207 **W** **4 credits**
FIRE APPARATUS AND PUMPING EQUIPMENT **RE**
 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.
 Prerequisite: None

FISC 210 **W** **3 credits**
BUILDING CONSTRUCTION FOR FIRE PROTECTION **RE**
 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.
 Prerequisite: None

FISC 215 **F,Sp** **3 credits**
FIXED SYSTEMS AND EXTINGUISHERS **RE**
 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.
 Prerequisite: None

FISC 220 **WILDLAND FIREFIGHTER II** **3 credits**
RE

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.

Prerequisite: None

FISC 224 **FIRE SERVICE INSTRUCTOR I** **3 credits**
RE

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.

Prerequisite: None

FISC 230 **WILDLAND FIREFIGHTER II REFRESHER** **1 credit**
RE

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.

FISC 255 **FIRE FIGHTING TACTICS AND STRATEGY** **3 credits**
RE

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.

Prerequisite: None

Geography (GEOG)

GEOG 105 **PHYSICAL GEOGRAPHY** **5 credits**
NSL

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.

Prerequisite: None

Geology (GEOL)

GEOL&101 **INTRO PHYSICAL GEOLOGY** **5 credits**
Sp **NSL**

Examines Earth's internal composition and structure, its internal and surficial 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.

Prerequisite: None

GEOL 105 **GEOLOGY: EARTH REVEALED** **5 credits**
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.

Prerequisite: None

GEOL 118 **HISTORICAL GEOLOGY** **5 credits**
F,W **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.

Prerequisite: None

GEOL 124 **GEOLOGY FIELDTRIP: COLUMBIA RIVER GORGE** **1 credit**
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.

Prerequisites: None

GEOL&208 **GEOLOGY OF PACIFIC NW** **5 credits**
S,F **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. (Formerly known as GEOL 170).

Prerequisite: None.

Health (HLTH)

HLTH 100 **S,F,W,Sp** **3 credits** **OCCUPATIONAL SAFETY AND HEALTH** **RE**

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.

Prerequisite: None

HLTH 105 **F,W,Sp** **1 credit** **FIRST AID, CPR AND 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.

Prerequisite: None

HLTH 106 **F,W,Sp** **2 credits** **HEALTH AND WELLNESS** **E**

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.

Prerequisite: None

HLTH 110 **2 credits** **PERSONAL HEALTH** **E**

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.

Prerequisite: None

HLTH 135 **W** **2 credits** **FOOD AND FITNESS** **E**

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.

Prerequisites: None

HLTH 245 **3 credits** **HEALTH AND EXERCISE BEHAVIOR CHANGE**

Explores the relationship between exercise, physical health and mental health. Covers exercise and mood, personality traits, nutrition behavior, and group dynamics. Includes application of practical skills related to working with others to promote exercise adherence and health and exercise intervention.

Prerequisites: None

High School Completion (HSC)

HSC 072 **1-5 credits** **COLLECTION OF EVIDENCE-READING AND WRITING**

Guides the student through collection of necessary samples of student achievement in writing and reading to fulfill the Washington State requirements for graduation and the Certificate of Academic Achievement.

Prerequisite: None Course is intended for CEO students.

HSC 073 **1-5 credits** **VISUAL ARTS - DRAWING**

Explores basic visual arts concepts such as the elements of art and the principles of design while engaging students in hands-on creative projects. Guides students to create, perfor (exhibit), and respond as they follow step-by-step pencil and paper drawing lessons. Intended for Career Education Options students.

Prerequisites: None

HSC 074 **1-5 credits** **STUDENT SUCCESS**

Prepares students to use proactive measures to cope with difficulties, take responsibility for their actions, and set and achieve short and long-term goals. Students will learn strategies for time management, textbook reading, test-taking, use of technology, communication, and interpersonal relations.

Prerequisite: None Course is intended for CEO students.

HSC 075 **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.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 076 **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.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 078 **1-5 credits**
COLLECTION OF EVIDENCE-ALGEBRA AND GEOMETRY

Guides students in the collection of necessary samples of student achievement in algebra and geometry to fulfill the Washington State requirements for graduation and the certificate of Academic Achievement. Intended for CEO students.

Prerequisites: None

HSC 079 **1-5 credits**
MATHEMATICAL 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 work in math-related real world situations.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 080 **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. Prerequisite: None Course is intended for CEO and HSC students.

HSC 081 **1-5 credits**
CULMINATING PROJECT

Enables students to demonstrate essential skills through reading, writing, speaking, production and/or performance of a culminating project. To complete the project, students may be asked to write a research paper, work with a mentor in school or in the community, present to a community or peer panel, pull together a portfolio of work and/or develop a multimedia presentation.

Prerequisites: Acceptance to CEO program.

HSC 082 **1-5 credits**
READING REBOOT

Provides individualized instruction in reading. This self-paced course identifies individual strengths and weaknesses in reading and builds strategies to overcome comprehension barriers in order to successfully draw relevance and meaning from written texts.

Prerequisites: None

HSC 083 **1-5 credits**
CAREER PLANNING

Directs students in an investigation of interests, values, and occupations utilizing the basic principles of information research. Includes introduction to the campus library, career center, and computer lab. Emphasizes the process of locating and evaluating information in both print and online formats. Assists students in forming personal goals and developing a plan for their education to prepare for the future.

Prerequisite: Acceptance to the CEO program Course is intended for CEO students.

HSC 084 **1-5 credits**
NUTRITION AND FITNESS

Provides self-paced study of nutrition and fitness related concepts, including components of nutrition, making healthy food choices, movement and coordination, lifelong fitness, and a look at each major body system involved in nutrition or fitness. In addition, students will gain knowledge about chronic diseases and disabilities and what is involved in building a healthy community.

Prerequisites: None

HSC 085 **1-5 credits**
MENTAL AND SOCIAL HEALTH

Provides self-paced study of mental and social health-related topics, including self-esteem, emotions, healthy relationships, stress management, mental disorders, suicide, violence prevention, substance abuse, and disease prevention.

Prerequisites: None

HSC 086 **1-5 credits**
INTRO 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. Prerequisite: None Course is intended for CEO and HSC students.

HSC 087 **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.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 088 **1-5 credits**
INTRODUCTION TO WRITING

Offers an introduction to patterns of development in writing and practice in the writing process. (Was HSC 012.)

Prerequisite: None

HSC 089 1-5 credits
ENGLISH ESSENTIALS

Provides a practical review of the grammar, punctuation, and usage skills that students need most. A diagnostic test determines students' individual problem areas, and instruction is designed to give students immediate feedback using self-correcting practice. Students may study subject-verb agreement, fragments, run-ons, pronouns, commas, apostrophes, quotation marks, homonyms, capital letters, word choice, misplaced/dangling modifiers, and parallelism.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 090 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. (Was HSC 024.)

Prerequisite: None.

HSC 091 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. (Was HSC 025.)

Prerequisite: None.

HSC 092 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.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 093 1-5 credits
US HISTORY I

Surveys United States history from pre-colonial times up to the beginning of the Civil War. (Was HSC 031.)

Prerequisite: None

HSC 094 1-5 credits
US HISTORY II

Surveys United States history from the Civil War to the present. Continuation of U.S. History I. (Was HSC 032.)

Prerequisite: None

HSC 095 1-5 credits
WASHINGTON STATE HISTORY

Explores the following themes and eras in Washington State history from 1854 to the present: Territories and treaty-making (1854-1889), railroads, reform, immigration, and labor (1889-1930), The Great Depression and World War II (1930-1945), new technologies and industries (1945-1980), and contemporary Washington State (1980-present).

Prerequisite: None Course is intended for CEO and HSC students.

HSC 096 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.

Prerequisite: None Course is intended for CEO and HSC students.

HSC 097 1-5 credits
CONSUMER FINANCE

Presents topics for personal money management, including budgeting, banking, consumer credit, and taxes. (Was HSC 042.)

Prerequisite: None.

HSC 098 1-5 credits
INTRODUCTION TO BIOLOGY

Introduces basic concepts in the biological sciences in order to develop an analytical and descriptive awareness of the biological community. Topics to be covered include biological theories, the organization and function of life, cells and DNA/RNA, genetics/heredity, classification of organisms, evolution, and ecology. The course is aligned with the current state standards and is designed to help prepare students to pass the state of Washington's End of Course (EOC) Exam in Biology. Intended for Career Education Options students.

Prerequisites: None

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.

Prerequisite: None

PHSC 109 **F** **5 credits**
ENERGY AND MATTER: PHYSICAL SCIENCE **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.
 Prerequisite: None

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.
 Prerequisites: None

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. (Formerly known as HIST 107)
 Prerequisite: None.

HIST&126 **F** **5 credits**
WORLD CIVILIZATION 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.
 Prerequisite: None.

HIST&127 **S,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.
 Prerequisite: None

HIST&128 **F,Sp** **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.
 Prerequisite: None.

HIST&136 **S,F,W,Sp** **5 credits**
US 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. (Formerly known as HIST 156)
 Prerequisite: None

HIST&137 **F,W,Sp** **5 credits**
US 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. (Formerly known as HIST 157)
 Prerequisite: None

HIST 205 **5 credits**
HISTORY OF EAST ASIA:DIV
 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.
 Prerequisite: None

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.
 Prerequisite: None

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.
 Prerequisite: None

HIST 254 **5 credits**
HISTORY OF WASHINGTON AND THE PACIFIC NORTHWEST
 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.
 Prerequisite: When taught as capstone - capstone prerequisites: when not taught as capstone - no prerequisites.

Home and Family Life (HOFL)

HOFL 131 **1-3 credits**
PARENT/CHILD EXPERIENCE
 Provides knowledge of early childhood development and parenting skills. Educational experiences may take place in early learning environments such as the LCC Home and Family Life Early Learning Center, and/or Headstart/ECEAP classrooms. Other options provided for students include parent seminars and independent parent/child projects.
 Prerequisite: None

HOFL 132 **1-3 credits**
PARENT/CHILD EXPERIENCE
 Provides knowledge of early childhood development and parenting skills. Educational experiences may take place in early learning environments such as the LCC Home and Family Life Learning Center and/or Head Start/ECEAP classrooms. Other options provided for students include parent seminars and independent parent/child projects.
 Prerequisite: None

HOFL 133 **1-3 credits**
PARENT/CHILD EXPERIENCE
 Provides knowledge of early childhood development and parenting skills. Educational experiences may take place in early learning environments such as the LCC Home and Family Learning Center and/or Head Start/ECEAP classrooms. Other options provided for students include parent seminars and independent parent/child projects.
 Prerequisite: None

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.
 Prerequisite: None

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.
 Prerequisite: None

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.
 Prerequisite: None.

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.
Prerequisite: None

HDEV 101 **S** **1-5 credits**
CAREER PLANNING **RE**

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.
Prerequisite: None

HDEV 106 **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.
Prerequisite: None

HDEV 107 **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.
Prerequisite: None

HDEV 108 **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.

Prerequisite: None

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.
Prerequisite: None

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.
Prerequisite: None

HDEV 116 **1-3 credits**
LEADERSHIP AND STUDENT GOVERNMENT **RE**

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.
Prerequisite: None

HDEV 117 **1-3 credits**
LEADERSHIP AND STUDENT GOVERNMENT **RE**

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.
Prerequisite: None

HDEV 118 **1-3 credits**
LEADERSHIP AND STUDENT GOVERNMENT **RE**

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.
Prerequisite: None

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.
 Prerequisite: None

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.
 Prerequisite: None

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.
 Prerequisite: None

HDEV 128 F,W,Sp 1 credit
TRANSFER PLANNING RE

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.
 Prerequisites: None

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."
 Prerequisite: None

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.
 Prerequisite: None

HDEV 165 2 credits
LEAD:LEADERSHIP EXPLORATION AND DEVELOPMENT RE

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.
 Prerequisites: Instructor permission.

HDEV 206 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.
 Prerequisite: None

HDEV 207 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.
 Prerequisite: None

HDEV 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.

Prerequisite: None

HDEV 216 1-3 credits

LEADERSHIP AND STUDENT GOVERNMENT RE

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.

Prerequisite: None

HDEV 217 1-3 credits

LEADERSHIP AND STUDENT GOVERNMENT RE

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.

Prerequisite: None

HDEV 218 1-3 credits

LEADERSHIP AND STUDENT GOVERNMENT RE

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.

Prerequisite: None

HDEV 221 F 2 credits

PEER MENTORING I RE

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 skillsets. Maximum number of credits possible: 2. Tuition waived.

Prerequisites: Students must be chosen to be Student Support Services Peer Mentors to enroll in the course.

HDEV 222 W 2 credits

PEER MENTORING II RE

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 skillsets. Maximum number of credits possible: 2. Tuition waived.

Prerequisites: HDEV 221 or instructor permission.

HDEV 223 Sp 1 credit

PEER MENTORING III RE

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 skillsets. Maximum number of credits possible: 2. Tuition waived.

Prerequisites: HDEV 222 or instructor permission.

Humanities (HUM)

HUM 104 S,W 5 credits

ETHICS AND CULTURAL VALUES 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.

HUM 106 F,W,Sp 1 credit

COMMUNITY CONVERSATIONS E

A weekly presentation/discussion series addressing contemporary issues in American life. The areas and issues contemplated include politics, the family, religion, the environment, health care, the economy and other important issues.

Prerequisite: None

HUM 107 **S,F,W,Sp** **1 credit**
HOW TO SEE A PLAY **H**
 Read play produced by LCC Center Stage and attend performance. After performance, actors, director, and designers participate in talkback session, answering questions prepared by students regarding play, production, and various elements required for a play presentation. Talkback includes social, political, philosophical and psychological components of the play and actor interpretation of the role(s) played.
 Prerequisite: None.

HUM& 116 **F** **5 credits**
HUMANITIES I **H**
 Survey of major movements in philosophy, art, music, architecture, and literature from prehistory to 1300 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 birth of civilization in the Near and Far East, the Classical Eras of Greece, Rome, and China, and the rise of Buddhism, Christianity, and Islam and cross-cultural encounters upon such works and the masters who created them.
 Prerequisite: College-level reading required.

HUM& 117 **S** **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.

HUM& 118 **Sp** **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.

HUM 150 **W,Sp** **1 credit**
ETHICS AND POLICY IN HEALTHCARE I **H**
 Introduces ethical and legal principles governing healthcare with a focus on nursing practice. Discusses historic milestones in nursing. First in a series of three courses on ethics and policy in healthcare. Restricted to students admitted to the nursing program. Prerequisites: Admission to the nursing program
 Prerequisites: Admission to the nursing program
 Concurrent requirements: NURS 151 or Nursing Program Director permission
 Concurrent requirements: NURS 151 or Nursing Program Director permission

HUM 164 **W** **5 credits**
CULTURAL JOURNEYS:DIV (WAS LIFESTYLES) **H,D**
 Explores the rich cultural heritage of different nationalities, ethnic groups and regions as expressed through a people's music, literature, film, 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.
 Prerequisites: None

HUM 210 **Sp** **5 credits**
MYTH 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 olitical 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

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. (Formerly known as HUMN 220)
 Prerequisite: None

HUM 230 **W** **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. (Formerly known as HUMN 230)
 Prerequisite: ENGL& 101 or instructor permission.

HUM 250 **2 credits**
ETHICS AND POLICY IN HEALTHCARE II **H**
 Presents organizational structures, legal considerations, policies, procedures and ethical principles/theories related to healthcare. Second course in a series of three courses. Restricted to students admitted to the nursing program. Prerequisites:HUM 150 with a grade of "C" or higher.
 Prerequisites:HUM 150 with a grade of "C" or higher. Concurrent requirements: NURS 251 or Nursing Program Director permission
 Concurrent requirements: NURS 251 or Nursing Program Director permission

HUM 251 2 credits

ETHICS AND POLICY IN HEALTHCARE III H

Presents research, leadership, workplace issues and ethical dilemmas in healthcare with an emphasis on nursing. Final course in a series of three courses. Restricted to students admitted to the nursing program. Prerequisites: HUM 250 with a grade of "C" or higher.

Prerequisites: HUM 250 with a grade of "C" or higher. concurrent requirements: NURS 253 or Nursing Program Director permission
concurrent requirements: NURS 253 or Nursing Program Director permission

HUM 255 1-5 credits

ETHICS AND POLICY IN HEALTHCARE

Introduces ethical and legal principles governing healthcare with a focus on nursing practice. Discusses historic milestones in nursing. Presents organizational structures, legal considerations, policies, procedures and ethical principles/theories related to healthcare. Builds upon previous concepts in research, leadership, workplace issues and ethical dilemmas in healthcare with an emphasis on nursing. Fulfills distribution requirement for AN-DTA only. Restricted to students admitted to the nursing program.

Prerequisite: Admission to the Nursing program

Individual Certificate Program (ICP)

ICP 101 1 credit

PHARMACY STANDARDS AND THE LAW RE

Introduces the role of the Pharmacy Technician, standards of conduct, scope of practice and laws as relates to a pharmacy technician certified in the state of Washington.

Prerequisite: High School diploma or GED.

ICP 102 4 credits

PHARMACY TECHNICIAN FUNDAMENTALS RE

Presents operational skills, introductory information in pharmacology, medication distribution and control measures, and pharmacy calculations. Provides students with the knowledge and skills to become a Pharmacy Technician A in the state of Washington.

Prerequisite: ICP 101

ICP 288 1-17 credits

COOPERATIVE WORK EXPERIENCE

Provides students with work-based learning experience in a specific program of study. Student will demonstrate satisfactory performance in the areas of self-management, work processes, teamwork, innovation and change, communication, and customer service.

Prerequisite: Formal admission to a specific program of study (ICP or other).

ICP 289 1 credit

EMPLOYMENT PORTFOLIO SEMINAR

Provides students with skills and tools necessary to apply for employment. Seminar topics include but are

not limited to employment portfolio, preparing for job interviews, and use of resources in the LCC Career and Employment Center.

Prerequisite: Formal admission to a program of study or ICP program.

ICP 291 2 credits

BECOMING AN EFFECTIVE EMPLOYEE SEMINAR

Provides students enrolled in Individualized Certificate Programs (ICP) an opportunity for guided exploration of topics important to successful employment in the modern workplace. Discussion topics include, but are not limited to, self management, work processes, teamwork, innovation and change, communication, and customer service.

Prerequisite: Concurrent or prior enrollment in work-based learning (ICP 288) or instructor permission.

Intensive English as a Second Language (IESL)

IESL 060 1-5 credits

SPEAKING/LISTENING

The listening portion of this course will focus on comprehension of spoken American english in various contexts. Learners will analyze aspects of non-verbal communication to improve language proficiency. The speaking portion of this course will focus on preparing students to use American English, including pronunciation and oral fluency. Students will discuss various topics, offer personal opinions, and use basic academic vocabulary. Learners will participate in group and individual presentations, class discussion, debates, formal and informal conversations. This course is part of an intensive English program and provides reading practice at the beginner to the high-intermediate level. This course may be repeated as needed until reaching competency. Successful completion of this course in conjunction with IESL Writing and Speaking/Listening courses qualifies the student to enroll in ENGL 098.

Concurrent requirements: IESL Reading (070), IESL Writing (080)

IESL 070 **1-5 credits**
INTEGRATED READING

Provides practice for use of comprehension strategies necessary for independent reading. Increase reading fluency while building literary and academic vocabulary. Develop strategies to help identify main idea, supporting details, and author's purpose in written materials. Requires in-depth reading of academic materials including novels, textbooks, short stories, and articles in both print and online format. This course is part of the Intensive English Program and provides reading practice at the beginner to the high-intermediate level. This course may be repeated as needed. Successful completion of this course in conjunction with IESL Writing and Speaking/Listening courses qualifies the student to enroll in ENGL 098. Prerequisites: None
Prerequisites: None Concurrent requirements: Speaking/Listening (060), IESL Writing (080)
Concurrent requirements: Speaking/Listening (060), IESL Writing (080)

IESL 080 **1-5 credits**
INTEGRATED WRITING AND GRAMMAR

Focuses on writing at the simple sentence level including vocabulary development, purpose and audience awareness. Introduces the writing process while providing practice in writing descriptive, narrative, expository, and persuasive paragraphs. Presents parts of speech and builds basic grammar skills that influence meaning in written work. This course is part of the Intensive English Program and provides reading practice at the beginner to the high-intermediate level. This course may be repeated as needed. Successful completion of this course in conjunction with IESL Writing and Speaking/Listening courses qualifies the students to enroll in ENGL 098. Prerequisites: None
Prerequisites: None Concurrent requirements: Speaking/Listening (060), IESL Reading (070)
Concurrent requirements: Speaking/Listening (060), IESL Reading (070)

IESL 090 **1-3 credits**
SPECIAL PROJECTS/SEMINAR

Provides opportunities for the study of various topics in the transitional phase into college-level classes. May serve as an opportunity for individualized study in any area of listening, speaking, reading, writing, or grammar. Seminar portion serves to integrate beginning and exiting IESL students. This course is part of the Intensive English Program and provides an opportunity for instruction necessary in addition to the regular IESL courses. This course may be repeated as needed.
Concurrent requirements: IESL Speaking and Listening (060), IESL Reading (070), IESL Writing (080).

IESL 091 **1 credit**
IESL SEMINAR

Provides opportunities for the study of various topics in the transitional phase into college-level classes. May serve as an opportunity for individualized study in any area of listening, speaking, reading, writing, or grammar. Seminar portion serves as a bridge support for students entering their first college-level classes. This course may be repeated as needed. Prerequisites: IESL Speaking and Listening (060), IESL Reading (070), IESL Writing (080)
Prerequisites: IESL Speaking and Listening (060), IESL Reading (070), IESL Writing (080) Concurrent requirements: English 098/099 or other college-level courses.
Concurrent requirements: English 098/099 or other college-level courses.

Library (LIBR)

LIBR 094 **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.
Prerequisite: None

LIBR 101 **2 credits**
INTRODUCTION TO LIBRARY AND 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.
Prerequisite: None.

LIBR 104 **2 credits**
INFORMATION LITERACY II

Reinforces basic research skills, strategies, and tools of information. Develops an understanding of the entire research process, from identifying topics to creating an annotated bibliography. Topics include narrowing and refining electronic searches, finding access to many types of resources, and evaluating popular and scholarly sources using a variety of criteria. Avoidance of plagiarism and correct documentation will be emphasized.
Prerequisite: None

LIBR 204 **1-2 credits**
INFORMATION LITERACY III **RE**
 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.
 Prerequisite: None

Machine Trades (MASP)

MASP 071 **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.
 Prerequisite: None

MASP 072 **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.
 Prerequisite: None

MASP 107 **S,F,W,Sp** **1-6 credits**
MACHINING FOR RELATED OCCUPATIONS **RE**
 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.
 Prerequisite: None

MASP 111 **S,F,W,Sp** **1-10 credits**
MACHINE SHOP I **RE**
 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.
 Prerequisite: None

MASP 112 **S,F,W,Sp** **1-10 credits**
MACHINE SHOP II **RE**
 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 **S,F,W,Sp** **1-10 credits**
MACHINE SHOP III **RE**
 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 **S,F,W,Sp** **1-10 credits**
MACHINE SHOP IV **RE**
 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 **S,F,W,Sp** **3 credits**
CNC MACHINING CENTER FUNDAMENTALS **RE**
 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.
 Prerequisite: None

MASP 205 **S,F,W,Sp** **3 credits**
CNC TURNING CENTER FUNDAMENTALS **RE**
 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.
 Prerequisite: None

MASP 221 **S,F,W,Sp** **1-10 credits**
CNC MILLING **RE**
 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 **S,F,W,Sp** **1-10 credits**
CNC TURNING **RE**
 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 **S,F,W,Sp** **1-6 credits**
ADVANCED CNC PROCESSES **RE**
 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 **RE**
 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.
 Prerequisite: None

MFG 110 **4 credits**
PROJECT MANAGEMENT **RE**
 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.
 Prerequisite: None

MFG 115 **F** **5 credits**
MANUFACTURING PROCESS **RE**
 A compressive 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.
 Prerequisite: None

MFG 120 **Sp** **4 credits**
QUALITY ASSURANCE **RE**
 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.
 Prerequisite: None.

MFG 130 **W** **5 credits**
MATERIALS SCIENCE **RE**
 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.
 Prerequisite: None

MFG 140 **F** **4 credits**
APPLIED HYDRAULICS **RE**
 Covers basic problems of hydraulics, fluids, power, hydraulics actuators, controls, pressures and circuits, and principles of industrial applications. (Formerly known as IMT 150).
 Prerequisite: MATH 079 or higher or instructor permission.

MFG 205 **3 credits**
WORK TEAMS IN INDUSTRY **RE**
 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.
 Prerequisite: None

MFG 230 **Sp** **4 credits**
COMPUTER INTEGRATED MANUFACTURING **RE**
 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.
 Prerequisite: None.

PMFG 110 **5 credits**
INDUSTRIAL MAINTENANCE FUNDAMENTALS **RE**
 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.
 Prerequisites: None.

PMFG 150 **6 credits**
ELECTRICAL AND ELECTRONIC
FUNDAMENTALS RE

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.

Prerequisites: MATH 087 or MATH 088/TECH 088 or higher or concurrent enrollment, or instructor permission

PMFG 151 **F** **5 credits**
PROCESS CONTROL EQUIPMENT RE

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.

Prerequisites: MATH 087 or MATH 088/TECH 088 or higher or concurrent enrollment, or instructor permission

PMFG 152 **W** **5 credits**
PROCESS CONTROL SYSTEMS RE

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 **W** **3 credits**
ELECTRICAL CONTROL EQUIPMENT RE

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 **Sp** **2 credits**
ELECTRIC MOTORS RE

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 **Sp** **5 credits**
ADVANCED INDUSTRIAL MAINTENANCE RE

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 RE

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.

Prerequisites: MATH 089/TECH 089 or MATH 097 and ENGL 099 or higher or instructor permission

Math (MATH)

MATH 050 **S,F,W,Sp** **1 credit**
REVIEW MATH-WHOLE NUMBER R

Provides a review of addition, subtraction, multiplication, and division of whole numbers. (Formerly known as INDV 050)

Prerequisite: None

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.

Prerequisite: None

MATH 078 **S,F,W,Sp** **3 credits**
PRE-COLLEGE MATH I R

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 **S,F,W,Sp** **2 credits**
PRE-COLLEGE MATH I **R**
 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 087 **F,W,Sp** **3 credits**
ESSENTIALS OF PRE-COLLEGE MATH II **R**
 Provides an introduction to algebraic concepts such as algebraic expressions, linear equations, and linear functions with an emphasis on contextual learning. This is the first 3 credits of a 6 credit course designed for students who are not planning on taking a course in calculus.
 Prerequisites: C or better in MATH 079, Placement Exam, or Instructor Permission

MATH 088 **S,F,W,Sp** **3 credits**
PRE-COLLEGE MATH II **R**
 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 **S,F,W,Sp** **2 credits**
PRE-COLLEGE MATH II **R**
 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.
 Prerequisites: C or better in MATH 087 or MATH 088 or TECH 088, Placement Exam, or instructor permission.

MATH 097 **F,W,Sp** **3 credits**
ESSENTIALS OF PRE-COLLEGE MATH III **R**
 Provides further exploration of algebraic concepts such as linear equations, quadratic functions, and exponential functions with an emphasis on contextual learning. This is the last 3 credits of a 6 credit course designed for students who are not planning on taking a course in calculus.
 Prerequisites: C or better in MATH 087 or MATH 089

MATH 098 **S,F,W,Sp** **3 credits**
PRE-COLLEGE MATH III **R**
 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.
 Prerequisites: C or better in MATH 089 or TECH 089 or MATH 097, Placement Exam, or instructor permission.

MATH 099 **S,F,W,Sp** **2 credits**
PRE-COLLEGE MATH III **R**
 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.
 Prerequisites: C or better in MATH 098 or TECH 098, Placement Exam, or instructor permission.

MATH 105 **F,W,Sp** **5 credits**
MATH FOR HEALTH SCIENCES **RE**
 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,W,Sp** **5 credits**
INDUSTRIAL MATHEMATICS **RE**
 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 **S,F,W,Sp** **5 credits**
MATH IN SOCIETY **NS, Q**
 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.
 Prerequisites: MATH 098/099 or TECH 098/099 or MATH 087/097 with a grade of C or higher.

MATH 125 F,W 5 credits
APPLIED COLLEGE ALGEBRA NS, Q

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. Prerequisites: MATH 099 with a C or better.

MATH&131 F 5 credits
MATH FOR ELEMENTARY EDUCATORS 1 NS, Q

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.

Prerequisites: MATH 098/TECH 098 or MATH 099/TECH 099 or MATH 087/097 with a grade of C or better.

MATH&132 W 5 credits
MATH FOR ELEMENTARY EDUCATORS 2 NS, Q

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.

Prerequisites: MATH& 131 (was MATH 121) with a grade of C or better. (MATH& 107 (was MATH 130) is recommended).

MATH&141 S,F,W,Sp 5 credits
PRECALCULUS I NS, Q

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.

Prerequisites: Placement score or MATH 098 and 099 (or TECH 098 and 099) with a C or better

MATH&142 S,F,W,Sp 5 credits
PRECALCULUS II NS, Q

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.

Prerequisites: Placement score or MATH& 141 with a C or better.

MATH&148 W,Sp 5 credits
BUSINESS CALCULUS NS, Q

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. (Formerly known as MATH 140)

Prerequisite: MATH 125 OR MATH& 141 with a grade of C or better.

MATH&151 F,W 5 credits
CALCULUS I NS, Q

Investigates the ideas of continuity and limit, introduces the derivative as a limit, practices techniques for computing derivatives of functions, discusses the mean value theorem and its significance, utilizes these concepts to solve problems involving related rates and extreme values. This is the first of four quarters of standard Calculus sequence for STEM majors.

Prerequisites: MATH& 142 with a grade of C or better.

MATH&152 W,Sp 5 credits
CALCULUS II NS, Q

Introduces techniques of antidifferentiation of functions including trigonometric, logarithmic, exponential, and hyperbolic functions. Applies the concept of the definite integral to solve problems involving force, work, volume, surface area, business and economics. (Formerly known as MATH 152)

Prerequisite: MATH& 151 with a grade of C or better.

MATH&153 S,Sp 5 credits
CALCULUS III NS, Q

Focuses on infinite series, vector calculus and their applications. Incorporates the use of polar, cylindrical and spherical coordinate systems in applications of the calculus. (Formerly known as MATH 153)

Prerequisite: MATH& 152 with a grade of C or better.

MATH 210 S,F,W,Sp 5 credits
ELEMENTS OF STATISTICS NS, Q

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 (was BSAD 206) and MATH 210.

Prerequisites: MATH 098/099, TECH 098/099, or MATH 087/097 with a grade of C or better.

MATH 211 **3 credits**
STATISTICAL PROJECTS **NS, Q**

Provides an opportunity for students to apply the statistical processes learned in MATH 210/BUS 206 (was BSAD 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 (was BSAD 206) with a grade of C or better or concurrent enrollment in MATH 210 or BUS 206 (was BSAD 206).

MATH 215 **W** **5 credits**
DISCRETE STRUCTURES **NS, Q**

Acquaints students with mathematical concepts used in computer science. Topics may include logic, induction, combinatorics, recursion, analysis of algorithms and graph theory.

Prerequisite: MATH& 142 with a grade of C or better.

MATH 220 **Sp** **5 credits**
LINEAR ALGEBRA **NS, Q**

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, Q**

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 (was MATH 154) with a grade of C or better.

MATH&254 **F** **5 credits**
CALCULUS IV **NS, Q**

Continuation of Calculus III. Topics include partial derivatives, multiple integrals, and vector calculus.

Prerequisites: MATH& 153 with a grade of C or better.

Medical Assisting (MEDA)

MEDA 101 **S,F,W,Sp** **3 credits**
MEDICAL VOCABULARY I **RE**

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.

Prerequisite: None

MEDA 102 **F,W,Sp** **3 credits**
MEDICAL VOCABULARY II **RE**

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.

Prerequisites: MEDA 101 or BTEC 181

MEDA 120 **F** **5 credits**
SURVEY OF HUMAN ANATOMY AND PHYSIOLOGY **RE**

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. This course is required for the certificate of proficiency or the AAS degree in medical assisting and the certificate of proficiency or AAS in Medical Billing and Coding.

Prerequisite: ENGL 099 or placement into ENGL 101.

MEDA 122 **W** **3 credits**
LAW & ETHICS FOR THE MEDICAL OFFICE **RE**

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.

Prerequisites: MEDA Program Director permission to enroll.

MEDA 145 Sp 6 credits
MEDICAL LABORATORY TECHNIQUES RE

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. Prerequisites: A grade of C or higher in: MEDA 120 or BIOL& 241 and BIOL& 242, MEDA 162; and AH 100 (or equivalent) for proof of seven-hours of education meeting RCW 70.24.270 rules for AIDS education and training for health professionals.

Prerequisites: A grade of C or higher in: MEDA 120 or BIOL& 241 and BIOL& 242, MEDA 162; and AH 100 (or equivalent) for proof of seven-hours of education meeting RCW 70.24.270 rules for AIDS education and training for health professionals. Concurrent requirements: Current enrollment in the Medical Assisting Cohort, or Medical Assisting program director permission

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MEDA 161 F 4 credits
EXAMINING ROOM PROCEDURES I RE

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. Prerequisites: Current enrollment in the Medical Assisting Program.

Prerequisites: Current enrollment in the Medical Assisting Program. Concurrent requirements: MEDA 120 if not already completed (or BIOL& 241/242)

Concurrent requirements: MEDA 120 if not already completed (or BIOL& 241/242)

MEDA 162 W 4 credits
EXAMINING ROOM PROCEDURES II RE

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.

Prerequisites: MEDA 161 and current enrollment in the Medical Assisting Program.

MEDA 165 Sp 5 credits
MEDICATIONS IN MEDICAL ASSISTING AND DISEASE RE

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. Prerequisites: A grade of C or higher in: MEDA 120 or BIOL& 241 and BIOL& 242, MEDA 162; and AH 100 (or equivalent) for proof of seven-hours of education meeting RCS 70.24.270 rules for AIDS education and training for health professionals.

Prerequisites: A grade of C or higher in: MEDA 120 or BIOL& 241 and BIOL& 242, MEDA 162; and AH 100 (or equivalent) for proof of seven-hours of education meeting RCS 70.24.270 rules for AIDS education and training for health professionals. Concurrent requirements: Current enrollment in the Medical Assisting Cohort, or Medical Assisting program director permission.

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MEDA 190 S 5 credits
MEDICAL ASSISTING TO PRECEPTORSHIP RE

Provides student the opportunity to apply learned skills and knowledge to a practical experience. Students are assigned to clinics and doctors' offices where they rotate to different tasks, building from the simpler to the more complex, under the supervision of a facility-appointed preceptor. Prerequisite: All previous MEDA courses and program requirements.

Prerequisite: All previous MEDA courses and program requirements. Concurrent requirements: Enrollment in MEDA 195

Concurrent requirements: Enrollment in MEDA 195

MEDA 195 S 1 credit
MEDICAL ASSISTING SEMINAR RE

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. cation exam is included. Prerequisites: A grade of C or higher in: MEDA 145, MEDA 165.

Prerequisites: A grade of C or higher in: MEDA 145, MEDA 165. Concurrent requirements: Enrollment in MEDA 190 or Medical Assisting Program director permission.

Concurrent requirements: Enrollment in MEDA 190 or Medical Assisting Program director permission.

MEDA 205 F,W 2 credits
CERTIFICATION REVIEW FOR MEDICAL ASSISTING RE

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.

Prerequisites: None

Music (MUSC)

MUSC 100 S,F,W,Sp 5 credits
FUNDAMENTALS OF MUSIC H

Introduces the language of music through performance, music reading, and music writing. Introduces basic keyboard and guitar skills. No prior musical background, skills, or prerequisites are required. Students do not need to own a piano or guitar to take this class. Prerequisite: None

MUSC 101 F 5 credits
THEORY AND MUSICIANSHIP I H

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 H

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 Sp 5 credits
THEORY AND MUSICIANSHIP III H

Further 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 S,F,W,Sp 5 credits
MUSIC APPRECIATION H

Examines the development of Western European music throughout history, beginning with the Fall of the Roman Empire through present day. Students will become acquainted with the musical characteristics/

styles, composers and music linked to each of the historical time periods, and explore the evolution of music through such elements. This course is designed for general college students and/or music majors and fulfills the requirements of the AA-DTA Humanities distribution list.

Prerequisites: None.

MUSC 106 F 1 credit
KEYBOARD SKILLS I E

Introduces basic piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.

Prerequisite: None

MUSC 107 W 1 credit
KEYBOARD SKILLS II E

Reinforces basic piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.

Prerequisite: MUSC 106 with a grade of C or higher or instructor permission.

MUSC 108 Sp 1 credit
KEYBOARD SKILLS III E

Further reinforces basic piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.

Prerequisite: MUSC 107 with a grade of C or higher or instructor permission.

MUSC 111 F 1 credit
EAR TRAINING I E

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.

Prerequisite: None

MUSC 112 W 1 credit
EAR TRAINING II E

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 8th notes and dotted notes.

Prerequisite: MUSC 111 Concurrent requirement: MUSC 102

MUSC 113 **Sp** **1 credit**
EAR TRAINING III **E**
 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 (pitch groups) and the notation of rhythms and melodies in compound meters with beamed 8th and 16th notes.
 Prerequisite: MUSC 112 Concurrent requirement: MUSC 103

MUSC 115 **2 credits**
GROUP PIANO INSTRUCTION **RE**
 Introduces the skills of piano performance and music reading in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. No prior musical background, skills, or prerequisites are required. "Keyboard Skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors. This course may be repeated for credit up to six times. Prerequisite: None

MUSC 117 **Sp** **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 influence of World music in America, with an emphasis on the cultural background of each genre.
 Prerequisite: None

MUSC 119 **S,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.
 Prerequisite: None

MUSC 121 **S,F,W,Sp** **2 credits**
BEGINNING GUITAR **E,P**
 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 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 **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,W,Sp** **2 credits**
CONCERT CHOIR I
 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course is designed for Music majors looking to transfer and complete a four-year degree in music; or for those students desiring to participate in a choral ensemble. Transfers to baccalaureates as an Elective or a Humanities credit.
 Prerequisites: Instructor permission.

MUSC 142 **F,W,Sp** **2 credits**
CONCERT CHOIR II
 Identifies 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 141 or instructor permission.

MUSC 143 F,W,Sp 2 credits
CONCERT CHOIR III

Explores 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit. Prerequisites: MUSC 142 or instructor permission.

MUSC 145 F,W,Sp 2 credits
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.
Prerequisite: None

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. Prerequisites: Instructor permission
Prerequisites: Instructor permission Concurrent requirements: MUSC 176/276 Individual Instruction (was MUSC 126/226)
Concurrent requirements: MUSC 176/276 Individual Instruction (was MUSC 126/226)

MUSC 151 F,W,Sp 2 credits
BELLA VOCE CHOIR I

Introduces the fundamental techniques and principles of integrating voice, music and showmanship in small performance choir. Students will memorize and perform music from a variety of styles ranging from Broadway & Contemporary to Jazz & Classical music with an emphasis on a capella repertoire. The course will occasionally employ some choreography, blocking, and/or staging. Ensembles perform a minimum of 1 concert per quarter, as well as various community outreach performances. All performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
Prerequisites: Instructor permission.

MUSC 152 F,W,Sp 2 credits
BELLA VOCE CHOIR II

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 1 concert per quarter, and all performances are mandatory. This course can be taken up to 2 times. This course will transfer to any four-year institution as an Elective or a Humanities credit.
Prerequisites: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 153 F,W,Sp 2 credits
BELLA VOCE CHOIR III

Explores fundamental techniques and principles of integrating voice, music and showmanship in small performance choir. Students will memorize and perform music from a variety of styles ranging from Broadway & Contemporary to Jazz & Classical music with an emphasis on a capella repertoire. The course will occasionally employ some choreography, blocking, and/or staging. Ensembles perform a minimum of 1 concert per quarter, as well as various community outreach performances. All performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
Prerequisites: MUSC 152 and instructor permission.

MUSC 170 2 credits
JAZZ IMPROVISATION E

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 2 credits
JAM BAND 101 E

Explore and develop 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 176 F,W,Sp 1 credit
INDIVIDUAL INSTRUCTION I H,P

Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
Prerequisites: None

MUSC 177 W 1 credit
INDIVIDUAL INSTRUCTION II H,P

Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
Prerequisites: None

MUSC 178 **Sp** **1 credit**
INDIVIDUAL INSTRUCTION III **H,P**
 Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
 Prerequisites: None

MUSC 197 **S** **1-5 credits**
REHEARSAL AND PERFORMANCE I **E**
 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 206 **F** **1 credit**
KEYBOARD SKILLS IV **E**
 Introduces intermediate piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.
 Prerequisite: MUSC 108 with a grade of C or higher or instructor permission.

MUSC 207 **W** **1 credit**
KEYBOARD SKILLS V **E**
 Reinforces intermediate piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.
 Prerequisite: MUSC 206 with a grade of C or higher or instructor permission.

MUSC 208 **Sp** **1 credit**
KEYBOARD SKILLS VI **E**
 Further reinforces intermediate piano skills in a lab setting comprising group instruction, one-on-one instruction, individual practice, and performance. "Keyboard skills" courses are intended for music majors, while "Group Piano Instruction" is intended for non-majors.
 Prerequisite: MUSC 207 with a grade of C or higher or 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.
 Prerequisite: None

MUSC 222 **W** **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 241 **F,W,Sp** **2 credits**
CONCERT CHOIR IV
 Demonstrates 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 143 or instructor permission.

MUSC 242 **F,W,Sp** **2 credits**
CONCERT CHOIR V
 Examines 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 241 or instructor permission.

MUSC 243 **F,W,Sp** **2 credits**
CONCERT CHOIR VI
 Refines 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 Musical Theatre. Ensemble will perform a minimum of 1 concert per quarter, and all performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 242 or instructor permission.

MUSC 251 **F,W,Sp** **2 credits**
BELLA VOCE CHOIR IV
 Introduces the fundamental techniques and principles of integrating voice, music and showmanship in small performance choir. Students will memorize and perform music from a variety of styles ranging from Broadway & Contemporary to Jazz & Classical music with an emphasis on a capella repertoire. The course will occasionally employ some choreography, blocking, and/or staging. Ensembles perform a minimum of 1 concert per quarter, as well as various community outreach performances. All performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 153 and instructor permission.

MUSC 252 **F,W,Sp** **2 credits**
BELLA VOCE CHOIR V
 Introduces the fundamental techniques and principles of integrating voice, music and showmanship in small performance choir. Students will memorize and perform music from a variety of styles ranging from Broadway & Contemporary to Jazz & Classical music with an emphasis on a capella repertoire. The course will occasionally employ some choreography, blocking, and/or staging. Ensembles perform a minimum of 1 concert per quarter, as well as various community outreach performances. All performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 251 and instructor permission.

MUSC 253 **F,W,Sp** **2 credits**
BELLA VOCE CHOIR VI
 Refines fundamental techniques and principles of integrating voice, music and showmanship in small performance choir. Students will memorize and perform music from a variety of styles ranging from Broadway & Contemporary to Jazz & Classical music with an emphasis on a capella repertoire. The course will occasionally employ some choreography, blocking, and/or staging. Ensembles perform a minimum of 1 concert per quarter, as well as various community outreach performances. All performances are mandatory. This course will transfer to any four year institution as an Elective or a Humanities credit.
 Prerequisites: MUSC 252 and instructor permission.

MUSC 276 **F** **1 credit**
INDIVIDUAL INSTRUCTION IV **H,P**
 Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
 Prerequisites: MUSC 176, 177, or 178.

MUSC 277 **W** **1 credit**
INDIVIDUAL INSTRUCTION V **H,P**
 Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
 Prerequisites: MUSC 176, 177, or 178.

MUSC 278 **Sp** **1 credit**
INDIVIDUAL INSTRUCTION VI **H,P**
 Provides instrumental / vocal instruction. Acquire and refine musical techniques using developmentally appropriate repertoire.
 Prerequisites: MUSC 176, 177, or 178.

Nursing (NURS)

NURS 090 **S,F,W,Sp** **8 credits**
NURSING ASSISTANT **R**
 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.
 Prerequisite: None.

NURS 101 **F,W,Sp** **5 credits**
NURSING FOUNDATIONS **RE**
 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.
 Prerequisites: Admission to the nursing program. Admission criteria is posted on the web. Concurrent requirement: NURS 111

NURS 102 **F,W,Sp** **5 credits**
BASIC NURSING I **RE**
 Builds on previously learned knowledge and introduces basic medical-surgical nursing care of adult and geriatric clients with selected health challenges. Care of the surgical client is introduced. Topics include cardiovascular, respiratory, endocrine, lymphatic, immune, hematological, and musculoskeletal health challenges. Prerequisite: NURS 101 and NURS 111, and concurrent enrollment or prior completion of AH 114.
 Prerequisite: NURS 101 and NURS 111, and concurrent enrollment or prior completion of AH 114. Concurrent requirements: NURS 112.
 Concurrent requirements: NURS 112.

NURS 103 **F,W,Sp** **5 credits**
BASIC NURSING II **RE**
 Expands knowledge of basic medical-surgical nursing care of clients with selected health challenges. Topics include cancer, neurological, genitourinary, gastrointestinal, acid-base, fluid and electrolyte, eye, ear and behavioral health concerns.
 Prerequisites: NURS 102 and NURS 112, AH 104 and AH 114, all with grade of C or higher. Concurrent requirement: Taken concurrently with NURS 113.

NURS 104 **F,W,Sp** **5 credits**
FAMILY NURSING **RE**
 Integrates previously learned knowledge with family nursing concepts for effective nursing care as provider of care, manager of care, and member of the discipline of nursing. Topics include care of the family, perinatal care, pediatric care, domestic violence, child abuse and neglect.
 Prerequisites: Nursing 103 and 113 with grade of C or higher. Concurrent requirement: Taken concurrently with NURS 114.

NURS 111 **F,W,Sp** **5 credits**
NURSING FOUNDATIONS - CLINICAL **RE**
 Provides opportunities to apply foundational concepts from NURS 101, as well as gain additional knowledge necessary to the performance of nursing care in the roles of provider of care, manager of care, and member of the discipline of nursing, with a focus on adult and geriatric clients. Topics include: physical assessment; dosage calculation; medication administration (non-injectable); care of the adult and geriatric client.
 Prerequisites: Concurrent enrollment in NURS 101.

NURS 112 **F,W,Sp** **5 credits**
BASIC NURSING I - CLINICAL **RE**
 Provides additional opportunities to apply knowledge from NURS 102 and previous courses in the roles of provider of care, manager of care, and member of the discipline of nursing by providing nursing care to stable adult and geriatric clients in the community, assisted care, long-term and/or rehab settings. Introduces injectable medications. Expands understanding and use of the nursing process.
 Prerequisites: NURS 101 and 111 with a grade of C or higher. Concurrent requirement: Taken concurrently with NURS 102.

NURS 113 **F,W,Sp** **5 credits**
BASIC NURSING II - CLINICAL **RE**
 Provides expanded opportunities to apply knowledge from NURS 103 and previous courses to effective nursing care as provider of care, manager of care, and member of the discipline of nursing, to adult clients in various settings, with a focus on acute care. Introduces intravenous fluids and medications. Prerequisite: NURS 102 and 112 with a grade of C or higher.
 Prerequisite: NURS 102 and 112 with a grade of C or higher. Concurrent requirements: Taken concurrently with NURS 103.
 Concurrent requirements: Taken concurrently with NURS 103.

NURS 114 **F,W,Sp** **5 credits**
FAMILY NURSING - CLINICAL **RE**
 Provides new opportunities to apply knowledge from NURS 104 and previous courses to effective nursing care as provider of care, manager of care, and member of the discipline of nursing for perinatal, newborn, and pediatric clients. Introduces infant injections and calculation of pediatric dosages. Community and acute care settings are utilized.
 Prerequisites: NURS 103 and NURS 113 with a grade of C or higher. Concurrent requirement: Taken concurrently with NURS 104.

NURS 150 **2 credits**
PHARMACOLOGY FOR NURSING I **RE**
 Introduces basic principles of pharmacology, therapeutic modalities, and dosage calculation. Provides an overview of drug classifications and prototypes. Prerequisites: Admission to the nursing program
 Prerequisites: Admission to the nursing program
 Concurrent requirements: NURS 151
 Concurrent requirements: NURS 151

NURS 151 **3 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS I **RE**
 Presents concepts that form the foundation of nursing practice and the roles of provider of care, manager of care, and member of the profession. Topics include: the nursing process, concepts of health and wellness, oxygenation, fluid and electrolyte balance, elimination, the integumentary system, comfort measures, and palliative care. Prerequisites: NURS 090 or equivalent and certification as a nursing assistant in WA or OR and admission to the nursing program. NURS 090 must be completed with a "C" or above.
 Prerequisites: NURS 090 or equivalent and certification as a nursing assistant in WA or OR and admission to the nursing program. NURS 090 must be completed with a "C" or above. Concurrent requirements: NURS 161
 Concurrent requirements: NURS 161

NURS 152 **5 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS II **RE**
 Builds upon foundational nursing knowledge and concepts. Focuses on health promotion and comprehensive care of clients with chronic illness. Promotes decision making and critical thinking in the nursing roles of provider of care, manager of care and member of the profession. Topics include cancer and the endocrine, respiratory, cardiovascular, and gastrointestinal systems. Prerequisites: NURS 151 with a "C" or higher.
 Prerequisites: NURS 151 with a "C" or higher.
 Concurrent requirements: NURS 162
 Concurrent requirements: NURS 162

NURS 153 **5 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS
III RE

Presents additional nursing knowledge and concepts focusing on comprehensive care of adults with chronic illness. Expands upon decision making and critical thinking. Further develops the nursing roles of provider of care, manager of care and member of the profession. Topics include perioperative care, and the genitourinary, reproductive, musculoskeletal, neurologic, and sensory systems. Prerequisites: NURS 152 with a grade of "C" or higher

Prerequisites: NURS 152 with a grade of "C" or higher

Concurrent requirements: NURS 163

Concurrent requirements: NURS 163

NURS 160 **2 credits**
SKILLS IN NURSING I RE

Introduces skills and the associated concepts for the provision of safe, effective nursing care. Topics include vital signs, physical assessment, sterile technique, wound care, blood glucose monitoring, medication administration, injections, nasogastric tubes, urinary catheters, and care of tracheostomies. Prerequisites: Admission to the nursing program.

Prerequisites: Admission to the nursing program.

Concurrent requirements: NURS 161

Concurrent requirements: NURS 161

NURS 161 **3 credits**
NURSING PRACTICUM I RE

Provides opportunities to perform beginning nursing care in the roles of provider of care, manager of care and member of the profession. Focuses on care of the client in skilled care and community settings. Prerequisites: Admission to the nursing program.

Prerequisites: Admission to the nursing program.

Concurrent requirements: NURS 151

Concurrent requirements: NURS 151

NURS 162 **5 credits**
NURSING PRACTICUM II RE

Provides additional opportunities to perform nursing care in the roles of provider of care, manager of care and member of the profession. Focuses on care of the client in skilled care facilities and additional community settings. Prerequisites: NURS 161 and NURS 160 with a grade of "Pass".

Prerequisites: NURS 161 and NURS 160 with a grade of "Pass". Concurrent requirements: NURS 152

Concurrent requirements: NURS 152

NURS 163 **5 credits**
NURSING PRACTICUM III RE

Continues to build upon previous experiences. Provides opportunities to perform nursing care in the roles of provider of care, manager of care and member of the profession, in the acute care and community settings, with increasing skill and independence. Prerequisites: NURS 162 with a grade of "Pass"

Prerequisites: NURS 162 with a grade of "Pass"

Concurrent requirements: NURS 153

Concurrent requirements: NURS 153

NURS 201 **5 credits**
ADVANCED COMPREHENSIVE NURSING I

Expands knowledge of nursing concepts and care gained at the basic level. Focuses on comprehensive care of clients throughout the lifespan in preparation for the registered nurse role as provider of care, manager of care, and member of the discipline of nursing. Topics include care of the client with cardiac, respiratory, renal and behavioral health challenges. Prerequisites: NURS 104 and NURS 114 with a grade of C or higher or admission to LPN2RN Campus-Based Option.

Prerequisites: NURS 104 and NURS 114 with a grade of C or higher or admission to LPN2RN Campus-Based Option. Concurrent requirements: NURS 221 and AH 230

Concurrent requirements: NURS 221 and AH 230

NURS 202 **F,W,Sp** **5 credits**
ADVANCED COMPREHENSIVE NURSING II RE

Further expands knowledge of nursing concepts and care, with a continued focus on comprehensive care of clients throughout the lifespan in preparation for the registered nurse role as provider of care, manager of care, and member of the discipline of nursing. Topics include care of the client with vascular, hematological, neurological, gastrointestinal, and additional behavioral health challenges.

Prerequisites: NURS 201 and NURS 221 with a grade of C or higher. Concurrent requirement: NURS 222

NURS 203 **F,W,Sp** **5 credits**
ADVANCED COMPREHENSIVE NURSING III RE

Expands on knowledge gained in previous nursing courses to further prepare the students for the role of a registered nurse. Focuses on providing comprehensive nursing care for clients throughout the lifespan with endocrine disorders, cancer, burns, trauma, terminal illness, and multi-system disorders. Disaster planning, research, and professional

Prerequisites: NURS 202 and NURS 222 with a grade of C or higher. Concurrent requirement: NURS 223

NURS 209 **F,W,Sp** **3 credits**
NURSING SUCCESS RE

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: Formal acceptance into the campus-based 2nd year of LCC nursing program. Instructor permission required for enrollment.

NURS 221 **F,W,Sp** **5 credits**
ADVANCED COMPREHENSIVE NURSING CLINICAL I **RE**
 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 skills and concepts. Introduces delegation at the registered nurse level. Prerequisites: NURS 104, NURS 114 with a grade of C or better. Taken concurrently with NURS 201.

NURS 222 **F,W,Sp** **5 credits**
ADVANCED COMPREHENSIVE NURSING CLINICAL II **RE**
 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 **F,W,Sp** **5 credits**
ADVANCED COMPREHENSIVE NURSING CLINICAL III **RE**
 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. Prerequisites: NURS 202 and 222 with a grade of C or higher. Concurrent requirement: NURS 203

NURS 241 **F** **4 credits**
ESSENTIAL CONCEPTS OF NURSING PRACTICE **RE**
 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. Prerequisites: Admission to the nursing program

NURS 242 **F** **3 credits**
NURSING THROUGHOUT THE LIFESPAN **RE**
 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. Prerequisites: NURS 241 with a grade of C or above or concurrent enrollment.

NURS 243 **W** **3 credits**
BEHAVIORAL HEALTH **RE**
 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. Prerequisites: NURS 242.

NURS 244 **W** **4 credits**
COMPREHENSIVE MEDICAL SURGICAL NURSING I **RE**
 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/fluid-electrolyte balance. Prerequisites: NURS 243 with a grade of C or above or concurrent enrollment.

NURS 245 **S,Sp** **4 credits**
COMPREHENSIVE MEDICAL SURGICAL NURSING II **RE**
 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 **Sp** **2 credits**
SKILLS LABORATORY **RE**
 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. Prerequisite: NURS 242 Concurrent requirements: NURS 243 or NURS 245. Concurrent requirements: NURS 243 or NURS 245

NURS 247 **S** **1-10 credits**
CLINICAL PRACTICUM **RE**
 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 **S** **5 credits**
ADVANCED CLINICAL PRACTICUM **RE**
 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.
 Prerequisites: NURS 247 or concurrent enrollment.

NURS 250 **1 credit**
PHARMACOLOGY FOR NURSING II **RE**
 Builds upon principles of pharmacology, therapeutic modalities, and dosage calculation with a focus on selected client populations. Prerequisites: NURS 150 and NURS 153 with a "C" or higher.
 Prerequisites: NURS 150 and NURS 153 with a "C" or higher. Concurrent requirements: NURS 251
 Concurrent requirements: NURS 251

NURS 251 **4 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS **RE**
IV
 Explores nursing knowledge and concepts focusing on comprehensive nursing care of clients in the roles of provider of care, manager of care and member of the profession. Further expands upon decision making and critical thinking. Topics include maternal-child nursing, growth and development, and health promotion. The cardiac system and the associated nursing care of selected clients is also discussed. Prerequisites: NURS 153 with a "C" or higher or Program Director permission
 Prerequisites: NURS 153 with a "C" or higher or Program Director permission Concurrent requirements: NURS 261
 Concurrent requirements: NURS 261

NURS 252 **5 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS **RE**
V
 Further develops nursing knowledge and concepts focusing on comprehensive care of clients with acute and complex health issues in preparation for the nursing roles of provider of care, manager of care and member of the profession. Topics include care of the client with respiratory, genitourinary, hematological and gastrointestinal health disorders. Prerequisites: NURS 251 with a grade of "C" or higher
 Prerequisites: NURS 251 with a grade of "C" or higher
 Concurrent requirements: NURS 262
 Concurrent requirements: NURS 262

NURS 253 **5 credits**
NURSING CONCEPTS IN HEALTH AND ILLNESS **RE**
VI
 Expands on knowledge gained in previous courses. Focuses on providing comprehensive nursing care for clients with complex health care needs. Topics include endocrine disorders, burns, trauma, shock, neurological disorders and disaster preparedness. Prerequisites: NURS 252 with a "C" or higher.
 Prerequisites: NURS 252 with a "C" or higher.
 Concurrent requirements: NURS 263
 Concurrent requirements: NURS 263

NURS 260 **1 credit**
SKILLS IN NURSING II **RE**
 Presents additional nursing skills. Builds upon previously learned concepts. Skills include pediatric assessment and infant injection, intravenous medication administration, and care of central lines. Prerequisites: NURS 160 with a "C" or higher or Program Director permission
 Prerequisites: NURS 160 with a "C" or higher or Program Director permission Concurrent requirements: NURS 261
 Concurrent requirements: NURS 261

NURS 261 **4 credits**
NURSING PRACTICUM IV **RE**
 Expands the opportunities to perform nursing in the roles of provider of care, manager of care and member of the profession. Introducing care of maternal-child clients. Builds on previous knowledge and skills to provide further experience in acute care of the adult with increasingly complex health concerns. Prerequisites: NURS 163 with a "C" or higher or Program Director permission
 Prerequisites: NURS 163 with a "C" or higher or Program Director permission Concurrent requirements: NURS 251
 Concurrent requirements: NURS 251

NURS 262 **5 credits**
NURSING PRACTICUM V **RE**

Builds upon previous knowledge, skills, and experiences and provides additional opportunities to perform nursing in the roles of provider of care, manager of care and member of the profession. Provides experience with clients experiencing increasingly complex alterations in health. Includes acute care and community settings. Prerequisites: NURS 261 with a grade of "Pass"
Prerequisites: NURS 261 with a grade of "Pass"
Concurrent requirements: NURS 252
Concurrent requirements: NURS 252

NURS 263 **5 credits**
NURSING PRACTICUM VI **RE**

Provides opportunities to perform nursing care under the guidance of a registered nurse preceptor, integrating previous knowledge, skills, and experience. Reinforces critical thinking, decision making, and skills in the beginning registered nurse roles of provider of care, manager of care and member of the profession. Prerequisites: NURS 262 with a grade of "Pass"
Prerequisites: NURS 262 with a grade of "Pass"
Concurrent requirements: NURS 253
Concurrent requirements: NURS 253

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 macronutrients 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. (Formerly known as CHEM 120)
Prerequisite: None

Oceanography (OCEA)

OCEA&101 **5 credits**
INTRO 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. (Formerly known as OCNG 140)
Prerequisite: None.

Philosophy (PHIL)

PHIL&101 **5 credits**
INTRO 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. (Formerly known as PHIL 200)
Prerequisite: ENGL& 101.

PHIL 210 **W** **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 **W** **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 **F,W,Sp** **1 credit**
PILATES AND STRETCH **E, PE**

Strength and flexibility exercises practiced with Pilates routine to create a balanced and effective program. Emphasis on core strength, posture, balance and toning.
Prerequisite: None

PHED 105 **S,F,Sp** **1 credit**
PILATES & YOGA-BEGINNING **E, PE**

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.
Prerequisite: None.

PHED 106 YOGA FOR BEGINNERS	W,Sp	1 credit E, PE	Introduces yoga routines and poses for a balanced and effective strength and flexibility workout. Emphasizes core strength, back strength, posture, balance, and toning of 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. Prerequisites: None
PHED 110 CIRCUIT TRAINING		2 credits E, PE	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. Prerequisite: None
PHED 114 ULTIMATE FRISBEE		1.5 credits	Introduces the skills and techniques basic to Ultimate Frisbee, including offensive and defensive play, strategies, etiquette and rules of the game. Ultimate Frisbee is a fast-paced, non-contact team sport, combining parts of soccer, football and basketball. Prerequisite: None
PHED 120 CROSS TRAINING	F,W,Sp	2 credits E, PE	Introduces the fundamental theories of cross-training for various types of activities. Implements individualized work-out routines needed to better your lifetime fitness whether it is strength training, power lifting, conditioning or endurance. Students will increase strength, fitness and conditioning by taking this class. Students will define and design a work-out program that will help them attain their fitness goals. Prerequisite: None
PHED 121 BEGINNING FOIL FENCING		1 credit E	Presents the skills, strategies, rules, and physical conditioning for the competitive or leisure pursuit of fencing. Prerequisite: None
PHED 122 INTERMEDIATE FOIL FENCING		1 credit E	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 BOOT CAMP	F	1 credit E, PE	Provides a well-rounded, full body work out 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 work outs, pilates and yoga will also be incorporated into this class. Prerequisite: None
PHED 126 AEROBIC EXERCISE	W,Sp	1-2 credits E, PE	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. Prerequisite: None
PHED 127 ZUMBA I	S,F	1-2 credits E, PE	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. Prerequisite: None
PHED 128 WEIGHT TRAINING	S,F,W,Sp	1-2 credits E, PE	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. Prerequisite: None
PHED 129 AQUA ZUMBA I		1-2 credits E	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. Prerequisite: None
PHED 130 SWIMMING		1 credit E	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. Prerequisite: None

PHED 135 **1-2 credits**
FITNESS WALKING **E, PE**
 Utilizes walking in developing the health-related components of physical fitness. Emphasis will be placed on cardiorespiratory endurance through low-impact, moderate intensity exercise.
 Prerequisite: None

PHED 139 **1-2 credits**
TRAIN FOR A RACE **E, PE**
 Promotes instruction, coaching and experience in training for a race (5k, 10k, adventure run). Work-outs 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.
 Prerequisites: None

PHED 140 **F** **1 credit**
BASKETBALL: MEN **E, PE**
 Provides opportunity for students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.
 Prerequisite: None

PHED 141 **F** **1 credit**
BASKETBALL: WOMEN **E, PE**
 Provides an opportunity for the students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.
 Prerequisite: None

PHED 145 **W** **3 credits**
SOFTBALL COACHING THEORY **E**
 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.
 Prerequisite: None

PHED 146 **F** **1 credit**
FASTPITCH SOFTBALL-WOMEN **E, PE**
 Presents students 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. Fall quarter.
 Prerequisite: None

PHED 147 **Sp** **2 credits**
APPLIED FASTPITCH SOFTBALL-WOMEN **E, PE**
 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 **F** **2 credits**
APPLIED SOCCER-WOMEN **E, PE**
 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 **S,F,W,Sp** **1-2 credits**
PERSONALIZED FITNESS **E, PE**
 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.
 Prerequisite: None

PHED 155 **W,Sp** **1 credit**
ROCK CLIMBING-BEGINNING **E, PE**
 Provides instruction in the skills and techniques of rock climbing. Introduces rock climbing equipment; provides practice in basic rock climbing skills and belaying. Upon successful completion of the course, students will receive a belay certification. Class is held in the on-campus, indoor rock climbing facility.
 Prerequisites: None

PHED 160 **F** **1 credit**
BASEBALL **E, PE**
 Enables students the opportunity to learn basic baseball skills, strategies and rules of play. A strict baseball-conditioning program will be emphasized.
 Prerequisite: None

PHED 162 **Sp** **2 credits**
APPLIED BASEBALL **E, PE**
 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 **W** **2 credits**
APPLIED BASKETBALL-MEN **E, PE**
 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 **W** **2 credits**
APPLIED BASKETBALL-WOMEN **E, PE**
 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 **F** **2 credits**
APPLIED VOLLEYBALL **E, PE**
 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 **W** **3 credits**
PREVENTION AND CARE OF ATHLETIC INJURIES E
 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.
 Prerequisite: None

PHED 190 **W** **3 credits**
BASEBALL COACHING THEORY E
 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.
 Prerequisite: None

PHED 192 **2 credits**
BASKETBALL COACHING THEORY E
 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.
 Prerequisite: None

PHED 204 **F,W,Sp** **1 credit**
PILATES AND STRETCH E, PE
 Strength and flexibility exercises practiced with pilates routines to create balanced and effective program. Emphasis on core strength, posture, balance and toning.
 Prerequisites: None.

PHED 205 **S,F,Sp** **1 credit**
PILATES & YOGA-INTERMEDIATE E, PE
 Builds on the basics of PHED 105 by giving students more difficult variations of the exercises. Pilates and yoga routines will be practiced together to create a balanced and effective strength and flexibility workout. Emphasis will be on core strength, back strength, posture, balance, and toning major muscle groups.
 Prerequisite: PHED 105 or instructor permission.

PHED 210 **2 credits**
CIRCUIT TRAINING E, PE
 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.
 Prerequisite: None

PHED 215 **F** **2 credits**
OUTDOOR SKILLS EXPERIENCE E, PE
 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.
 Prerequisites: None

PHED 216 **2 credits**
WINTER OUTDOOR ADVENTURE E, PE
 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.
 Prerequisites: None

PHED 220 **F,W,Sp** **2 credits**
CROSS TRAINING E, PE
 Introduces the fundamental theories of cross-training for various types of activities. Implements individualized work-out routines needed to better your lifetime fitness whether it is strength training, power lifting, conditioning or endurance. Students will increase strength, fitness and conditioning by taking this class. Students will define and design a work-out program that will help them attain their fitness goals.
 Prerequisite: None

PHED 226 **W,Sp** **1-2 credits**
AEROBIC EXERCISE E, PE
 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.
 Prerequisite: None

PHED 227 **S,F** **1-2 credits**
ZUMBA II **E, PE**
 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. Prerequisite: None

PHED 228 **S,F,W,Sp** **1-2 credits**
WEIGHT TRAINING **E, PE**
 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. Prerequisite: None

PHED 229 **F,W,Sp** **1-2 credits**
AQUA ZUMBA II **E**
 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. Prerequisite: None

PHED 230 **1 credit**
SWIMMING **E**
 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. Prerequisite: None

PHED 235 **1-2 credits**
FITNESS WALKING **E, PE**
 Utilizes walking in developing the health-related components of physical fitness. Emphasis will be placed on cardio respiratory endurance through low-impact, moderate intensity exercise. Prerequisite: None

PHED 240 **F** **1 credit**
BASKETBALL: MEN **E, PE**
 Provides an opportunity for students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program. Prerequisite: None

PHED 241 **F** **1 credit**
BASKETBALL: WOMEN **E, PE**
 Provides an opportunity for the students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program. Prerequisite: None

PHED 246 **F** **1 credit**
FASTPITCH SOFTBALL-WOMEN **E, PE**
 Presents students 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. Prerequisite: None

PHED 247 **Sp** **2 credits**
APPLIED FASTPITCH SOFTBALL-WOMEN **E, PE**
 Provides students the opportunity to demonstrate fastpitch softball skills, strategies, rules of play and participation in a softball-conditioning program. Prerequisite: Instructor permission

PHED 249 **F** **2 credits**
APPLIED SOCCER-WOMEN **E, PE**
 Provides students the opportunity to demonstrate soccer skills, strategies, and rules of play and to participate in a conditioning program. Prerequisite: Instructor permission

PHED 252 **S,F,W,Sp** **1-2 credits**
PERSONALIZED FITNESS **E, PE**
 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. Prerequisite: None

PHED 260 **F** **1 credit**
BASEBALL **E, PE**
 Enables students the opportunity to learn basic baseball skills, strategies and rules of play. A strict baseball-conditioning program will be emphasized. Prerequisite: None

PHED 262 **Sp** **2 credits**
APPLIED BASEBALL **E, PE**
 Provides students the opportunity to learn baseball skills, strategies, rules of play and to participate in a baseball conditioning program. Prerequisite: Instructor permission.

PHED 264 **W** **2 credits**
APPLIED BASKETBALL-MEN **E, PE**
 Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program. Prerequisite: Instructor permission

PHED 265 **W** **2 credits**
APPLIED BASKETBALL-WOMEN **E, PE**
 Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program. Prerequisite: Instructor permission

PHED 267 **F** **2 credits**
APPLIED VOLLEYBALL **E, PE**
 Gives students an opportunity to demonstrate volleyball skills, strategies, and rules of play and participate in a volleyball-conditioning program.
 Prerequisite: Instructor permission

PHED 282 **3 credits**
WATER SAFETY INSTRUCTION **E**
 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.
 Prerequisite: None

PHED 284 **2 credits**
LIFEGUARD TRAINING **E**
 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.
 Prerequisite: None

PHED 285 **3 credits**
FITNESS MARKETING
 Provides an overview of the marketing process and functions with a focus on launching and growing a fitness business and/or career.
 Prerequisites: None

PHED 295 **Sp** **3 credits**
PERSONAL TRAINING INSTRUCTION **E**
 Provides content and skills necessary to become effective personal trainers and to prepare for the ACE Personal Trainer Certification Exam. This course presents the ACE Integrated Fitness Training® Model as a comprehensive system for designing individualized programs based on each client's unique health, fitness, and goals. Information covered will help students learn to facilitate rapport, adherence, self-efficacy, and behavior change in clients, as well as design programs to improve clients' posture, movement, flexibility, balance, core function, cardiorespiratory fitness, muscular endurance and strength, and sports performance. This course is built on a curriculum developed by a nationally recognized certification program.
 Prerequisites: None

PHED 296 **Sp** **3 credits**
GROUP EXERCISE INSTRUCTION **E**
 Provides the knowledge and understanding necessary to prepare for the ACE Group Fitness Instructor Certification Exam and become effective group fitness instructors. Information covered includes: basic human anatomy and exercise physiology, steps in designing a successful group exercise class, understanding the fitness needs of special populations, and examining the business side of group fitness instruction. This course is built on a curriculum developed by a nationally recognized certification program.
 Prerequisites: None

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.
 Prerequisite: None

PHSC 109 **F** **5 credits**
ENERGY AND MATTER: PHYSICAL SCIENCE **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.
 Prerequisite: None

Physics (PHYS)

PHYS&100 **Sp** **5 credits**
PHYSICS:NON-SCI MAJOR **NSL**
 Emphasizes the process and historical/logical development of physics and relates the conceptual ideas of physics to everyday experience. The course is offered primarily to meet laboratory science requirements for an Associate degree; it is also useful in lieu of high school physics. Laboratory is included. (Formerly PHYS 100)
 Prerequisites: MATH 089 or TECH 089 or MATH 097, or permission of the instructor.

PHYS&114 **F** **5 credits**
GENERAL PHYS 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.
 Prerequisites: MATH 098/TECH 098 or MATH 099/TECH 099 or MATH 087/097 with a grade of C or better.

PHYS&115 **W** **5 credits**
GENERAL PHYS 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. (Formerly known as PHYS 102)
 Prerequisites: PHYS& 114 or Instructor Permission.

PHYS&116 **Sp** **5 credits**
GENERAL PHYS 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. (Formerly known as PHYS 103)
 Prerequisite: PHYS& 115 (was PHYS 102) 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 **F** **5 credits**
ENGR 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. (Formerly known as PHYS 251)
 Prerequisite: Completion of or concurrent enrollment in MATH& 151 or instructor permission.

PHYS&222 **W** **5 credits**
ENGR 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. (Formerly known as PHYS 252)
 Prerequisite: PHYS& 221 (was PHYS 251), MATH& 152 or instructor permission.

PHYS&223 **Sp** **5 credits**
ENGR 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. (Formerly known as PHYS 253)
 Prerequisite: PHYS& 222 (was PHYS 252) or instructor permission.

Political Science (POLS)

POLS&101 **F,W** **5 credits**
INTRODUCTION TO 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.
 Prerequisite: None

POLS&202 **S,F,W,Sp** **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. (Formerly known as POLS 106)
 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. (Formerly known as POLS 108)
 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.
 Prerequisites: None

POLS 220 **5 credits**
THE LAW & SOCIAL ISSUES
 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.
 Prerequisite: None

POLS 294 **1-5 credits**
SELECTED TOPICS IN POLITICAL SCIENCE I
 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.
 Prerequisite: None

POLS 295 **1-5 credits**
SELECTED TOPICS IN POLITICAL SCIENCE II
 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.
 Prerequisite: None

POLS 296 **1-5 credits**
SELECTED TOPICS IN POLITICAL SCIENCE III
 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.
 Prerequisite: None

POLS 297 **1-5 credits**
SELECTED TOPICS IN POLITICAL SCIENCE 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.
 Prerequisite: None

Process Control Manufacturing (PMFG)

PMFG 110 **5 credits**
INDUSTRIAL MAINTENANCE FUNDAMENTALS **RE**
 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.
 Prerequisites: None.

PMFG 150 **6 credits**
ELECTRICAL AND ELECTRONIC FUNDAMENTALS **RE**
 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.
 Prerequisites: MATH 087 or MATH 088/TECH 088 or higher or concurrent enrollment, or instructor permission

PMFG 151 **F** **5 credits**
PROCESS CONTROL EQUIPMENT **RE**
 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.
 Prerequisites: MATH 087 or MATH 088/TECH 088 or higher or concurrent enrollment, or instructor permission

PMFG 152 **W** **5 credits**
PROCESS CONTROL SYSTEMS **RE**

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 **W** **3 credits**
ELECTRICAL CONTROL EQUIPMENT **RE**

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 **Sp** **2 credits**
ELECTRIC MOTORS **RE**

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 **Sp** **5 credits**
ADVANCED INDUSTRIAL MAINTENANCE **RE**

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 **RE**

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.

Prerequisites: MATH 089/TECH 089 or MATH 097 and ENGL 099 or higher or instructor permission

Psychology (PSYC)

PSYC&100 **S,F,W,Sp** **5 credits**
GENERAL PSYCHOLOGY **SS**

Studies the science of behavior and fosters understanding of human development, learning, motivation, emotions, reactions to frustration, mental health and therapy, perception, and personality. (Formerly known as PSYC 111)

Prerequisite: None

PSYC 140 **3 credits**
INTRODUCTION TO SPORT PSYCHOLOGY **E**

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.

Prerequisite: None

PSYC 150 **2 credits**
PSYCHOSOCIAL ISSUES IN HEALTH CARE I **SS**

Presents concepts necessary for the provision of psychosocial healthcare. Examines determinants of health and illness across the lifespan, including social, psychological, environmental, spiritual and cultural dimensions, within the context of health care. Topics include coping mechanisms, therapeutic communication, culturally sensitive nursing care and social determinates of health. Fulfills distribution requirement for AN-DTA only. Course offering to nursing program students only.

Prerequisites: NURS 152 with a grade of "C" or higher or instructor permission.

PSYC&200 **S,F,W,Sp** **5 credits**
LIFESPAN PSYCHOLOGY **SS**

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. (Formerly known as PSYC 205)

Prerequisite: PSYC& 100 (was PSYC 111) or instructor permission.

PSYC 204 **Sp** **5 credits**
APPLIED PSYCHOLOGY **SS**

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 (was PSYC 111) or instructor permission.

PSYC 214 **5 credits**
PSYCHOLOGY OF ADJUSTMENT **SS**

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 (was PSYC 111) or instructor permission.

PSYC&220 **W,Sp** **5 credits**
ABNORMAL PSYCHOLOGY **SS**
 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. (Formerly known as PSYC 220)
 Prerequisite: PSYC& 100 (was PSYC 111) or instructor permission.

PSYC 250 **3 credits**
PSYCHOSOCIAL ISSUES IN HEALTH CARE II **SS**
 Presents additional concepts necessary for the provision of psychosocial healthcare. Analyzes determinants of health and illness across the lifespan, including social, psychological, environmental, spiritual and cultural dimensions, within the context of health care. Topics include care of the client experiencing mental health challenges, anxiety disorders, thought disorders, mood disorders and chemical dependency. Fulfills distribution requirement for AN-DTA only. Course offering to nursing program students only.
 Prerequisites: NURS 251 and PSYC 150 with a grade of "C" or higher.

PSYC 255 **1-5 credits**
PSYCHOSOCIAL ISSUES IN HEALTH CARE
 Presents additional concepts necessary for the provision of psychosocial healthcare. Analyzes determinants of health and illness across the lifespan, including social, psychological, environmental, spiritual and cultural dimensions, within the context of health care. Topics include care of the client experiencing mental health challenges, anxiety disorders, thought disorders, mood disorders and chemical dependency. Fulfills distribution requirement for AN-DTA only. Restricted to students admitted to the nursing program.
 Prerequisite: Admission to the Nursing program.

Sociology (SOC)

SOC& 101 **S,F,W,Sp** **5 credits**
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. (Formerly known as SOCY 110)
 Prerequisite: None

SOC 210 **Sp** **5 credits**
HUMAN SEXUALITY:DIV **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. Draws upon the multiple disciplines of sociology, psychology, and cultural anthropology. Incorporates English literature in biographies and/or short story form to illuminate real world issues. Special attention is given to sexual diversity, specifically marginalized LGBTQ individuals, sexual disorders, and sex and gender non-conformity.
 Prerequisites: None.

SOC 225 **Sp** **5 credits**
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.
 Prerequisite: None

Spanish (SPAN)

SPAN 097 **2 credits**
SPANISH GRAMMAR FOR BEGINNERS:PRESENT TENSE VERB
 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. (Formerly known as INDV 097)
 Prerequisite: None

SPAN 098 **1 credit**
SPANISH GRAMMAR FOR BEGINNERS:NOUNS/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. (Formerly known as INDV 098)
 Prerequisite: None

SPAN 104 S,F,W,Sp 1-5 credits
INTRODUCTION TO SPANISH IN THE
WORKPLACE E

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).

Prerequisite: None

SPAN 105 S,F,W,Sp 1-5 credits
INTRODUCTION TO SPANISH IN THE
WORKPLACE E

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

SPAN 106 S,F,W,Sp 1-5 credits
SPANISH IN THE WORKPLACE E

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

SPAN 107 S,F,W,Sp 1-5 credits
SPANISH IN THE WORKPLACE E

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

SPAN&121 S,F,W,Sp 5 credits
SPANISH I:DIV H,D

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.

Prerequisites: None

SPAN&122 S,F,W,Sp 5 credits
SPANISH II:DIV H,D

Provides continuation of basic principles offered in SPAN& 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.

Prerequisites: SPAN& 121 with a grade of C or better or two years of high school Spanish.

SPAN&123 S,F,W,Sp 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.

Prerequisites: SPAN& 122 with a grade of C or better or three years of high school Spanish.

SPAN&221 S,F,W,Sp 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. (Formerly known as SPAN 201)

Prerequisite: For enrollment in second-year Spanish courses, students must complete first-year college level Spanish.

SPAN&222 S,F,W,Sp 5 credits
SPANISH V H

Continues to build communication skills, accumulate vocabulary, and increase fluency, with added emphasis on literacy. (Formerly known as SPAN 202)

Prerequisite: SPAN& 221 (was SPAN 201) or equivalent.

SPAN&223 S,F,W,Sp 5 credits
SPANISH VI H

Continues to build communication skills, accumulate vocabulary, and increase fluency, with added emphasis on literacy. (Formerly known as SPAN 203)

Prerequisite: SPAN& 222 (was SPAN 202) 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, and working contexts are considered.
Prerequisite: None

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.
Prerequisite: None

SPCH 110 S,F,W,Sp 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.
Prerequisite: None

SPCH 114 S,F,W,Sp 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.
Prerequisite: None.

SPCH 126 F 2 credits **COMPETITIVE PUBLIC SPEAKING E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.
Prerequisite: None

SPCH 127 W 2 credits **COMPETITIVE PUBLIC SPEAKING E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics

events. Students must participate in a minimum of two intercollegiate tournaments.

Prerequisite: None

SPCH 128 Sp 2 credits **COMPETITIVE PUBLIC SPEAKING E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.
Prerequisite: None

SPCH 136 F 2 credits **INTERCOLLEGIATE DEBATE E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 137 W 2 credits **INTERCOLLEGIATE DEBATE E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 138 Sp 2 credits **INTERCOLLEGIATE DEBATE E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 209 Sp 5 credits **RHETORICAL 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 226 F 2 credits **COMPETITIVE PUBLIC SPEAKING E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.
Prerequisite: None

SPCH 227 **W** **2 credits**
COMPETITIVE PUBLIC SPEAKING **E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.
Prerequisite: None

SPCH 228 **Sp** **2 credits**
COMPETITIVE PUBLIC SPEAKING **E**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.
Prerequisite: None

SPCH 236 **F** **2 credits**
INTERCOLLEGIATE DEBATE **E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 237 **W** **2 credits**
INTERCOLLEGIATE DEBATE **E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 238 **Sp** **2 credits**
INTERCOLLEGIATE DEBATE **E**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.
Prerequisite: None

SPCH 290 **F,W,Sp** **1 credit**
FORENSIC MANAGEMENT AND ORGANIZATION **E**

Provides instruction and practical experience in the setup, administration, and judging of forensics tournaments. Graded on a pass/fail basis.
Prerequisite: None

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.
Prerequisite: None

TECH 078 **S,F,W,Sp** **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.

TECH 079 **S,F,W,Sp** **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 **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. Credit cannot be earned for both MATH 088 and TECH 088.
Prerequisite: MATH 079 or TECH 079 with a C or better, placement exam or instructor permission.

TECH 089 **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.
Prerequisites: C or better in MATH 087 or MATH 088 or TECH 088, Placement Exam, or instructor permission.

TECH 090 **5 credits**
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.
Prerequisite: None

TECH 098 **3 credits**
PRE-COLLEGE MATH III

Covers factoring polynomialys 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.
Prerequisites: C or better in MATH 089 or TECH 089 or MATH 097, Placement Exam, or instructor permission.

TECH 099 **5 credits**
PRE-COLLEGE MATH III

Covers solving systems of equations, operations on rational and radical expressions, solving and graphing quadratic equations, and an introduction to exponential and logarithmic functions. This is the third in a three course pre-college mathematics sequence which contains pre-college math modules 11 - 15. Credit cannot be earned for both MATH 099 and TECH 099. Prerequisite: C or better in TECH 098 or MATH 098, placement exam, or instructor permission.

TECH 100 **S,F,W,Sp** **5 credits**
ADVANCED PRINCIPLES OF TECHNOLOGY **RE**

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 **RE**

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 **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.

Prerequisite: None

WELD 072 **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.

Prerequisite: None

WELD 105 **S,F,W,Sp** **1-6 credits**
RELATED WELDING I **RE**

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.

Prerequisite: None.

WELD 151 **S,F,W,Sp** **1-6 credits**
INTRO TO OXY-ACETYLENE **RE**

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.

Prerequisite: None

WELD 152 **S,F,W,Sp** **1-10 credits**
INTRO TO ARC WELDING **RE**

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.

Prerequisite: None

WELD 158 **5 credits**
WELDING THEORY AND FABRICATION **RE**

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 **S,F,W,Sp** **10 credits**
WIRE MACHINE **RE**

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 **S,F,W,Sp** **6 credits**
ADVANCED WIRE MACHINE **RE**

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 **S,F,W,Sp** **1-10 credits**
ARC WELDING **RE**

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 **S,F,W,Sp** **1-10 credits**
ADVANCED WELDING PROCESSES **RE**

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 **S,F,W,Sp** **1-10 credits**
ADVANCED WELDING APPLICATION **RE**
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

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1600 Maple Street, Longview, WA 98632
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