

# 2007 - 2009

## Academic Catalog



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## 2007–2008 Academic Calendar

### Important Phone Numbers

Bookstore	(360) 442-2240
Cashier	(360) 442-2210
Childcare	(360) 442-2890
Disabled Students	(360) 442-2341
Entry Center	(360) 442-2311
Financial Aid	(360) 442-2390
Registration	(360) 442-2370
Running Start	(360) 442-2352
Testing Center	(360) 442-2353
TTY	(360) 442-2344
Veterans	(360) 442-2393
Woodland Center	(360) 225-4768
Worker Retraining	(360) 442-2336

#### Fall 2007

First Day of Instruction	Sept. 17, 2007
Veterans' Day Holiday	Nov. 12, 2007
Thanksgiving Holiday	Nov. 22 & 23, 2007
Last Day of Instruction	Nov. 30, 2007
Faculty Office Day	Dec. 3, 2007
Finals	Dec. 4-6, 2007

#### Winter 2008

First Day of Instruction	Jan. 7, 2008
M. L. King Holiday	Jan. 21, 2008
Presidents' Day Holiday	Feb. 18, 2008
Last Day of Instruction	March 14, 2008
Faculty Office Day	March 17, 2008
Finals	March 18-20, 2008

#### Spring 2008

First Day of Instruction	April 1, 2008
Memorial Day Holiday	May 26, 2008
Last Day of Instruction	June 9, 2008
Office Day	June 10, 2008
Finals	June 11-13, 2008
Commencement	June 13, 2008

#### Summer 2008

First Day of Instruction	June 23, 2008
Independence Day Holiday	July 4, 2008
Finals / Last day of classes	August 14, 2008

The 2008–09 calendar was not available at press time.  
For the latest info, check [lowercolumbia.edu/academiccalendar](http://lowercolumbia.edu/academiccalendar)

## Welcome to Lower Columbia College

If you have already chosen to attend Lower Columbia College, you've made a great choice. If you are still considering colleges, I want to thank you for your interest in LCC.

I am proud of Lower Columbia College and the quality instruction and support we provide to all of our students. I know what you are thinking. Of course I'm going to praise Lower Columbia College. I'm the president. Yes, that's true, but I speak from personal experience too. Both of my kids attended Lower Columbia College before they transferred to a university and both of them are glad they did. After graduating from LCC and transferring to a university, my daughter even commented on several occasions that she missed LCC and the personal attention she received here.

I hope that you, too, will find that everyone at LCC is dedicated to your bright future. After all, our mission is to ensure student success. We take that mission very seriously and we will do everything possible to help you succeed. As you plan your future and start creating what you want in your life, I hope you find that Lower Columbia College has what you need to get started on your path to success.



Dr. Jim McLaughlin, President



President Jim McLaughlin visits with students in the LCC quad. Kavita Dugdale, left, plans to get her nursing degree at LCC, then transfer for her bachelor's and master's. Chris Porter, second from right, is studying chemistry and plans to become a doctor. Hanna Burleson, right, will transfer to WSU Vancouver. She plans to be a biology teacher.

### 2007 LCC Board of Trustees

**Max Anderson**, Vice-Chair, Longview, WA  
Registered Investment Advisor

**Kay Cochran**, Cathlamet, WA  
Broker and Owner of Lower Columbia Realty  
Retired Wahkiakum County Assessor

**Mike Heuer**, Kelso, WA  
President — Woodworkers Union, Longview  
Training and Safety Lead, Weyerhaeuser

**Lyle Lovingfoss**, Kelso, WA  
Electrical/Instrumentation Team Development  
Manager, Weyerhaeuser

**Thuy Vo**, Chair, Longview, WA  
Owner, VO Printers

### Our Vision

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

### Our 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.

### Our Value System

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



## You can change your life. You can start here.

### Lower Columbia College offers:

- The first two years of a bachelor's degree
- Professional/technical degrees
- Customized Training and special services for Business & Industry
- Lifelong learning opportunities (classes just for fun)
- Pre-College classes to prepare you for college level
- English as a Second Language
- College for high school students
- Worker Retraining
- Online classes

Lower Columbia College, in Longview, Washington, was founded in 1934 and now serves approximately 4,000 students each quarter. Small class sizes mean LCC students get lots of individual attention and the chance to really get to know their instructors and classmates.

Longview is located along the Columbia River, with beautiful forests and Mt. St. Helens nearby. The Pacific Ocean is just an hour away.

The College offers many different degrees and certificates. Start a bachelor's degree with one of our specialized transfer degrees in 13 high-demand fields, or focus a general transfer degree on one of about 40 additional fields of study. If you are looking for career training, choose from 64 different professional/technical degrees and certificates.

### Quick Facts\*

#### Student Profile

Number of students: 4,159  
 Full-time: 49.5%  
 Part-time: 50.5%  
 Male: 34.9%  
 Female: 65.1%  
 Ethnicity: 85.8% Caucasian;  
 14.2% of color  
 Average Age: 32

#### Faculty

Full time: 76  
 Part time: 104

*\*Based on Fall 2006 data*

#### Contact Information

Lower Columbia College  
 The Entry Center  
 1600 Maple Street, PO Box 3010  
 Longview, WA 98632

(360) 442-2311  
 info@lowercolumbia.edu  
 www.lowercolumbia.edu

#### Accreditation

Lower Columbia College is accredited by the Northwest Commission on Colleges and Universities, an institutional accrediting body recognized by the Council for Higher Education Accreditation and the Secretary of the U.S. Department of Education.

#### State Approving Agency

The academic programs of study are approved by the Higher Education Coordinating Board's State Approving Agency (HECB/SAA) for enrollment of persons eligible to receive educational benefits under Title 38 and Title 10, U.S. Code.



## Getting Started at Lower Columbia College

### Step 1: Apply for admission

Check in at the Entry Center (in Admissions Center lobby) to apply for admission or apply online at [lowercolumbia.edu/applynow](http://lowercolumbia.edu/applynow)

### Step 2: Apply for financial aid

If you need help paying for college, you might qualify for federal financial aid. Get information and applications at the Financial Aid Office in the Admissions Center or online at [lowercolumbia.edu/finaid](http://lowercolumbia.edu/finaid)

### Step 3: Attend a welcome session

Learn about admission, financial aid, advising and placement, textbooks and more. Sessions are usually offered weekdays on the hour. Check at the Entry Center in the Admissions Center for the current schedule.



### Step 4: Take COMPASS assessment

If you plan to get a degree or certificate, or you plan to transfer to a four-year college, you will need to take the COMPASS assessment to determine your skill level in reading, writing and math. COMPASS is available at the Advising and Testing Office. You don't need an appointment. Contact the Entry Center for the current schedule.

### Step 5: Meet with an advisor

Meet with an Entry Advisor to discuss educational goals and develop a course schedule. Contact the Entry Center for an appointment.

### Step 6: Register for classes

The first time you register at LCC, you will do it in person at the Registration Office in the LCC Admissions Center. Your Entry Advisor will explain the process. Be sure to get your global PIN number, so you can access your records and other information, pay your tuition and (next time) register online at [lowercolumbia.edu/kiosk](http://lowercolumbia.edu/kiosk)

### Step 7: Pay tuition

Go to the Cashier's Window in the Admissions Center or pay online at kiosk. If you are receiving Financial Aid, finalize your paperwork first.

### Step 8: Buy textbooks

Textbooks are available at the bookstore, located in the Student Center, or online at [lowercolumbia.edu/bookstore](http://lowercolumbia.edu/bookstore)

### Step 9: Attend new student orientation

Learn about student services, tour the campus and get your Student Handbook, which is loaded with important information. Find more information at the Entry Center.

### Step 10: Get help along the way

We want you to succeed. If you need help with anything during your time at LCC, just ask. Check our website at [lowercolumbia.edu/students](http://lowercolumbia.edu/students) for all the resources available to you—from tutoring and counseling to transfer assistance and career planning.

### About this Catalog

Every effort is made to ensure that the information in this catalog is accurate at the time of publication. 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](http://lowercolumbia.edu/catalog)



**At LCC, student support doesn't stop in the classroom. We have resources to help you every step of the way. Check out these resources available to you on campus.**

## Academic & Career Resources

### Advising

**lowercolumbia.edu/advising (360) 442-2311**

The advising program at LCC offers you information, support, and guidance from individual program and entry advisors. While you will still be responsible for your educational planning, your advisor can help you choose the right classes for your program. Advisors are assigned based on their particular knowledge in your area of interest or major. If you plan to earn a degree or certificate at LCC or you plan to transfer to a four-year institution, you must meet with an advisor prior to registering each quarter.

### Career and Employment Services

**lowercolumbia.edu/careercenter (360) 442-2330**

Career and Employment Services can help you assess your career interests, research careers, search for job openings, and land that new job, with special help in resumé development and job interview preparation. We offer special support to men and women who are interested in non-traditional careers (for example, women as auto mechanics or men as nurses). Our Cooperative Education program (see page 11) can help arrange college credit for work experience in your field of study. Stop by to use our reference library of videotapes, magazines, books, college catalogs, computer-based career software, and Internet access, and check the current listing of permanent, temporary, part-time, and full-time jobs. Career and Employment Services is located in the Admissions Center and is open during regular college hours. Our services are available to students and members of the community. Check out our online employment service at [lowercolumbia.edu/hireconnections](http://lowercolumbia.edu/hireconnections)

### Counseling

**lowercolumbia.edu/counseling (360) 442-2311**

Lower Columbia College provides counseling services for students, including personal, educational, and career counseling. If you would like to schedule an appointment with a counselor, call the Entry Center, 442-2311. LCC's counselors are located in the Admissions Center. Individuals needing extensive personal counseling will be referred to private services off campus.

### Entry Center

**info@lowercolumbia.edu (360) 442-2311**

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

### Learning Center

**lowercolumbia.edu/learningcenter (360) 442-2570**

The Learning Center offers individualized, self-paced courses in basic reading and writing skills, Spanish grammar, mathematics, and general study skills (test taking and preparation, textbook reading and note taking). Trained staff work in a quiet, personal environment to help you learn new skills and/or improve existing skills so you will do well in college courses. Hours of operation are posted in the Learning Center.

### Retention Program

**(360) 442-2351**

Lower Columbia College staff members will contact you several times during your first quarter to offer assistance, inform you of services on campus, and remind you of upcoming dates and deadlines.

### Transfer Center

**lowercolumbia.edu/transfercenter (360) 442-2350**

The personnel in the Transfer Center, located in the Admissions Center, can help you make a successful transition to a four-year institution. You can get help with selecting a transfer college or university, as well as admission procedures, financial aid application, housing information, and transfer admission requirements. The Center sponsors van trips to popular transfer colleges and has transfer guides that show course transfer equivalencies.

### Tutoring

**lowercolumbia.edu/tutoring (360) 442-2572**

Individual and group tutoring is available to any LCC student. Well-qualified tutors can help you with most college subjects, as well as writing and study skills. Tutoring is offered on a walk-in, limited appointment, special needs one-on-one, and focused group basis. The Center, located in the southeast wing of the Alan Thompson Library, is open days, evenings, and some Saturdays. For more information on tutoring, the center's current hours, and a list of tutors and the subjects they can help you with, contact the tutor coordinator or visit the Tutoring Center's Web page.

#### Equal Opportunity and Reasonable Accommodation

It is the policy of Lower Columbia College to provide equal opportunity in all facets of education and employment regardless of sex, race, creed, marital status, age, national origin, sexual orientation, veteran status, religious preference, or the presence of any sensory, mental or physical disability. To request disability accommodations in the application process, students should contact the Special Services Office at least 3 days in advance at – Voice: (360) 442-2341, or email: [tcorrie@lowercolumbia.edu](mailto:tcorrie@lowercolumbia.edu). The Title IX equal opportunity officer is Mary Harding, LCC Admissions Center, Room 159, (360) 442-2301. LCC's Section 504 disability and ADA Coordinator is John Krause. For more information call (360) 442-2331.

## Special Services

### Childcare

[lowercolumbia.edu/childcare](http://lowercolumbia.edu/childcare) (360) 442-2890

Childcare for children 1 month through 6 years of age is available to LCC students, staff and faculty members. Limited enrollment is open to the community at large. In addition to childcare services, Home & Family Life Early Learning Center offers an inclusive Pre-Kindergarten Readiness Program, Monday through Thursday. Student parents must register for Home and Family Life credits. Full-day and half-day rates are available, and DSHS payments accepted. Breakfast, lunch and afternoon snacks provided and USDA approved. The Early Learning Center follows the LCC academic calendar and is open weekdays from 7:45 a.m. until 5:00 p.m.

### International Program

[lowercolumbia.edu/international](http://lowercolumbia.edu/international) (360) 442-2300

Lower Columbia College welcomes students from other countries. The College is committed to promoting international cultural awareness and understanding, and international students are integral to this commitment. For information on international student admission and enrollment, see page 15 or our webpage.

### Multicultural Services

[lowercolumbia.edu/multicultural](http://lowercolumbia.edu/multicultural) (360) 442-2424

Lower Columbia College seeks cultural diversity among the student population and is committed to recruiting and educating students from underrepresented populations at LCC.

The Multicultural Services staff addresses these students' needs and helps them participate in all aspects of student life at LCC by providing culturally-supportive personal guidance, culturally-related programs and activities, vocational and educational exploration, course and program advising, assistance with the financial aid process, and mentoring opportunities. These services are coordinated and provided by the Multicultural Services Director in the Student Center and by the Multicultural Advisor in the Student Support Services Program. Also, the Multicultural Club offers a host of campus activities.



### Student Support Services

[lowercolumbia.edu/sss](http://lowercolumbia.edu/sss) (360) 442-2420

Student Support Services provides academic assistance to help program-eligible students succeed in college. The federally funded Trio program helps students stay in college, graduate, and transfer to a four-year institution. Services include advising, individualized tutoring, and peer mentoring. If you qualify, Student Support Services will review your program of study regularly and guide you toward a timely graduation. They will also help you select a career and a transfer school and improve your study skills and personal awareness to become a more effective college student.

### Students with Disabilities

[lowercolumbia.edu/disability](http://lowercolumbia.edu/disability) (360) 442-2341

If you have a disability and need assistance, the Special Services Office may be able to assist you. The College is committed to providing support services to students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Contact the Special Services Office at least one month prior to the beginning of classes to obtain services. You will be required to provide documentation of your disability. The office may also be able to assist with academic advising, referrals to agencies, admission, registration for classes, assistance with applying for financial aid, and arranging appropriate auxiliary aids.

### Veterans Services

(360) 442-2393

The College offers V.A.-approved educational programs to eligible veterans and eligible dependents of deceased or totally disabled veterans under Title 38 and Title 10, U.S. Code. If you qualify for this program, the Veterans' Affairs Office can help you process applications for V.A. educational benefits and can provide information on eligibility, pay, and other V.A. matters. The Office is located in the Financial Aid area of the Admissions Center. Assistance is available Monday through Friday from 8 a.m. to 5 p.m. Evening appointments may be arranged.

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 the Veterans' Affairs staff. To qualify, you must provide a copy of your DD Form 214, showing that you were awarded either the Vietnam Service Medal or the Southwest Asia Service Medal.

LCC programs are approved for V.A. educational benefits by the Higher Education Coordinating Board. The College participates in the following V.A. educational programs: Montgomery GI Bill—Active Duty program based on the veteran's active military service; Montgomery GI Bill—Selected Reserve program for military reserve and National Guard service; the V.A. Vocational Rehabilitation program for veterans with service-connected disabilities; and the Survivors and Dependents Educational Assistance program.



## Worker Retraining

[lowercolumbia.edu/workerretraining](http://lowercolumbia.edu/workerretraining) 442-2336

If you have lost your job due to plant closures, downsizing, or other causes, are a displaced homemaker or have lost your business, LCC may be able to help you get new job skills and training. The College works with the Employment Security Department and other community agencies to provide services to dislocated workers. The various community partners together provide a broad array of assistance and can work with companies and employees as they plan layoffs and downsizing. To be eligible for services, unemployed workers will need to meet certain requirements with layoff notices and/or eligibility for unemployment benefits. We offer educational planning, advising, assistance with admissions, registration, financial aid, and ongoing assistance while you are enrolled. Located in the Career & Employment Center, Room 116 in the Admissions Building.

## Campus Facilities

LCC's campus environment focuses on student learning. From a full-service library and electronic resource center to modern computer labs, you will find what you need to succeed in your coursework.

## Alan Thompson Library

[lowercolumbia.edu/library](http://lowercolumbia.edu/library) 442-2660

The Alan Thompson Library houses the college's media and book collections, as well as instructional administrative staff and the Tutoring Center. The Library portion occupies over 16,000 square feet and contains collections of print, audiovisual, and electronic materials. You will find more than 40,000 books and a large selection of periodicals in paper issue, microfilm, and electronic versions. A computerized catalog provides online access to the holdings of both the College and Longview Public Library. The Library also offers a leisure reading paperback collection, audio and video carrels, copy machines, typewriters, and interlibrary loan access.

The Library's website offers extensive research and reference sources, including daily electronic versions of area newspapers. Students may ask the reference librarian questions via email from the library homepage and receive answers within 24 hours. Computerized databases offer access to hundreds of academic journals and specialized research in nursing, education, technical studies, and other topics, also accessible through the Library's Web site.

## Art Gallery

[lowercolumbia.edu/artgallery](http://lowercolumbia.edu/artgallery) 442-2511

The LCC Art Gallery is a "teaching gallery" that provides students and the community with a wide variety of exhibits, as well as related lectures, workshops, and demonstrations. Featuring the work of Northwest artists, the gallery typically hosts two shows each fall, winter, and spring quarter. An exhibit featuring the works of current students caps the academic year in late spring. Hours are 10 a.m. to 4 p.m. Monday and Tuesday, and 10 a.m. to 8 p.m. Wednesday and Thursday.

## Bookstore

[lowercolumbia.edu/bookstore](http://lowercolumbia.edu/bookstore) 442-2240

You will find new and used 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 1st floor in the Student Center. A book buyback is held during finals week of each quarter. The Bookstore is open to the public, weekdays from 8 a.m. to 5 p.m., with extended hours as needed. Summer hours vary. Check the quarterly class schedule for hours and buyback dates. You can also order your books online at <http://www.lowercolumbia.edu/bookstore>. The Bookstore's primary goal is to serve students, and the staff is always open to your suggestions.



## Computer Labs

[lowercolumbia.edu/computerlabs](http://lowercolumbia.edu/computerlabs)

Lower Columbia College maintains modern computing facilities equipped with the latest hardware and software in support of instructional programs, students, faculty, staff, and administration. The College's instructional computing facilities, which include a central campus computing center and several other labs that support specific programs, are networked using the latest network hardware and software. Students, faculty, administrators, and staff are able to access the Internet through the campus network. Wireless Internet access is available to students with notebook computers. Please contact the Information Services Department, located in the Information Technology Center, for assistance. Students are also eligible to receive individual log-on accounts and email addresses.

## Food Service

[lowercolumbia.edu/cafe](http://lowercolumbia.edu/cafe)

Lower Columbia College provides food service when classes are in session. The serving area opens for breakfast and coffee at 7 a.m. Breakfast is served all day. Daily lunch specials are prepared from 10 a.m. to 2 p.m. Hamburgers, salads, soups, sandwiches, pizza, and snacks are also available. The espresso bar is open weekdays, 7 a.m. until 1:30 p.m. Catering and banquets can be provided upon request.

## Gym & Fitness Center

[lowercolumbia.edu/fitnesscenter](http://lowercolumbia.edu/fitnesscenter)

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, or Aerobics class to add some "positive" stress to your hectic schedule. Inhale... Exhale!

## Rose Center for the Arts

[lowercolumbia.edu/rosecenter](http://lowercolumbia.edu/rosecenter)

The new Rose Center for the Arts, to be ready for use in early 2008, will showcase the College's fine arts programs, with a 500-seat auditorium for concerts and other events, a 125-seat theatre, and excellent new rehearsal space, faculty offices, practice rooms, digital recording studio and a new home for the LCC Art Gallery.

## Safety & Security

[lowercolumbia.edu/safety](http://lowercolumbia.edu/safety)

442-2260

Lower Columbia College works hard to provide a safe and healthy environment for students and employees. Security personnel are on duty nearly 24 hours a day to assist students and staff, patrol buildings and parking lots, and respond to emergencies, fire alarms, security alarms, and other situations as they arise. A security guard is on duty for evening classes and for weekends. LCC works closely with local law enforcement agencies, and a special telephone-to-radio line allows access to campus security personnel at any hour.

## Woodland Center

[lowercolumbia.edu/woodland](http://lowercolumbia.edu/woodland)

(360) 225-4768 or 1-800-291-4518

The LCC Woodland Center, located at 650 Goerig St., Suite F in the heart of Woodland (about 21 miles south of our main campus), provides south Cowlitz County with a variety of classes, including college general education courses meeting college transfer and vocational program requirements, plus a growing list of Community Education and Prime Time classes. The Center also offers placement testing, Food Handler Card information and testing, WorkKeys worker certification, English as a Second Language, GED and High School Completion classes. For further information, call (360) 225-4768 or 1-800-291-4518.

Get involved in one or more of LCC's clubs or organizations, and you will be more likely to succeed academically— studies prove it. Plus, it is a great way to make lifelong friendships. The Student Activities Office, located in the Student Center, coordinates many co-curricular events and activities and is the campus headquarters for the Associated Students of Lower Columbia College (ASLCC), student publications, and a number of student clubs.



### Associated Students of Lower Columbia College (ASLCC)

[lowercolumbia.edu/aslcc](http://lowercolumbia.edu/aslcc)

442-2441

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 Executive Council is the student governing body. The Council meets weekly to administer the ASLCC budget, schedule entertainment and service activities, develop committees to deal with LCC campus issues, participate in the college's standing councils and committees, and represent LCC students in legislative issues that affect their education. ASLCC officers are elected each May.

### Athletics (Go Red Devils!)

[lowercolumbia.edu/athletics](http://lowercolumbia.edu/athletics)

442-2471

Lower Columbia College Red Devils and Lady Red Devils have a rich tradition in intercollegiate athletics and can provide you with opportunities to develop important life skills. LCC intercollegiate teams are members of the Northwest Athletic Association of Community Colleges and participate in Women's Soccer, Women's Volleyball, Men's Basketball, Women's Basketball, Men's Baseball,

and Women's Softball. In order to represent Lower Columbia College in intercollegiate athletics, you must satisfy eligibility requirements outlined in the codebook of the Northwest Athletics Association of Community Colleges. Information is available through the Athletic Office, located in the Student Center. LCC students, faculty and staff get free admission to home games.

### Drama

[lowercolumbia.edu/theatre](http://lowercolumbia.edu/theatre)

The Drama program at LCC presents at least one major theatre production each quarter through the support of the ASLCC, Office of Instruction, and the ACT One Club. The new Rose Center for the Arts includes an intimate 125-seat thrust theatre. All productions are open to LCC students and to the general public. Auditions are held at the theatre the first two nights of each quarter. Students cast in the play or working backstage can receive college credit. Admission to Center Stage productions is free for all LCC students, faculty and staff.

### Forensics

[lowercolumbia.edu/forensics](http://lowercolumbia.edu/forensics)

442-2671

Lower Columbia College has a strong and successful speech and debate program. Thanks to ASLCC funding assistance, members participate in regional and national competitions in both team and individual contests, enjoying success (including national and regional championships) against both two-year and four-year schools. LCC's Forensics program has also established the annual Steelhead and Smelt Classics, which bring competing teams of high school and



college students to the campus from throughout the Northwest. The LCC Forensics program is directed by LCC Speech faculty and is affiliated with Phi Rho Pi, the National Forensics Society for 2-year colleges.

## Music

[lowercolumbia.edu/music](http://lowercolumbia.edu/music)

442-2680

Lower Columbia College offers many opportunities to study and enjoy music through participation in LCC musical groups. These include the Concert Choir, Symphonic Band, Jazz Vocal Ensemble and Jazz Band, and other groups under the direction of the music faculty. Visiting professionals also present recitals, clinics, and workshops designed to enrich your musical experience at LCC. Top high school musicians from high schools in southwest Washington and northwest Oregon come to LCC each year for our High School Invitational Honor Band.

Most concerts have been held in Longview's venerable Columbia Theatre for the Performing Arts, but the Music Program will have a new home (and venue) in the Rose Center for the Arts, beginning in 2008.

LCC musicians also assist with area solo and ensemble bands and choral contest operations. Music education majors can get valuable music education career experience (and Cooperative Education credit) working as student interns with local school districts.



## Phi Theta Kappa

[lowercolumbia.edu/ptk](http://lowercolumbia.edu/ptk)

442-2882

Gamma Tau, the college's chapter of the Phi Theta Kappa international two-year honor society, emphasizes scholarship, leadership, service, and fellowship. Membership is open to all students who have completed 12 credits with a 3.5 GPA or higher. In recent years, Gamma Tau chapter members have been named to the National Dean's List and received Academic All-USA scholarships, among others. The chapter takes students to area conferences, and members volunteer often on campus and in the community.

## Publications

**Headliner**—The Student Activities staff publishes and distributes the weekly online Headliner, a listing of announcements and news to keep you informed about campus events. Printed copies are distributed in the Student Center, and a link to the electronic version is distributed by email. Submit items for inclusion at the Activities Desk in the Student Center.

**Student Handbook**—Each fall the ASLCC and the College publish a student handbook. It includes current information on facilities, descriptions and locations of services, registration procedures, schedules and calendars, rights and responsibilities of students, personnel contacts and phone numbers. Copies are available at the Student Activities information desk in the Student Center. It is also posted on the ASLCC webpage.

## Student Clubs & Organizations

ASLCC-subsidized organizations and clubs may be formed as special interests develop. Each group must complete an informational application, establish a membership list, and have an advisor. The ASLCC Executive Council also funds activities on campus that are coordinated by committees. Some of the current ASLCC organizations and activities include:

- **Associated Students**
- **Bible Study**
- **Biological Society**
- **Campus entertainment/events**
- **Chemistry Club**
- **Democratic Society**
- **Drama Club (ACT ONE)**
- **Fencing Club**
- **Forensics (speech and debate) (Phi Rho Pi)**
- **Multicultural Club**
- **New Student Orientation**
- **Student Nurse Organization**
- **Photography Club**
- **Student League of Independent Potters (SLIP)**
- **Transfer Club**
- **Writers/poets organization**



**Co-Admission to WSU-Vancouver**  
[lowercolumbia.edu/coadmission](http://lowercolumbia.edu/coadmission)  
 (360) 442-2311

You can earn your bachelor's degree here in southwest Washington. Take advantage of LCC and WSU-Vancouver's Co-Admission Program to save a bundle on tuition and living expenses, and do away with transfer and admission hassles. For more information on Co-Admission, contact the LCC Entry Center. Information on bachelor's degrees offered at WSU-Vancouver is available at <http://www.vancouver.wsu.edu/>

**Elementary Education**  
[lowercolumbia.edu/elementaryed](http://lowercolumbia.edu/elementaryed)  
 (360) 442-2941

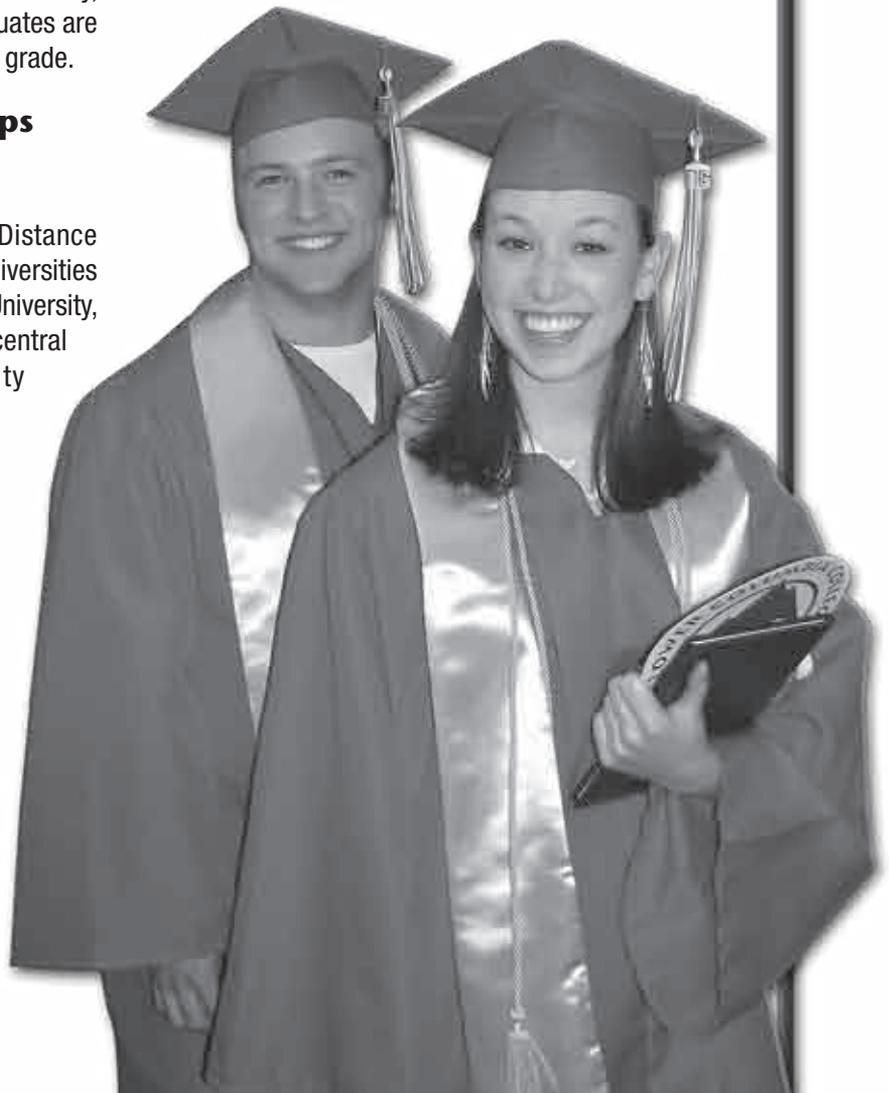
WSU Vancouver offers a Bachelor of Arts Degree in Elementary Education program, with classes held locally, many of them here on the LCC campus. Graduates are certified to teach kindergarten through eighth grade.

**Distance Education Partnerships**  
[lowercolumbia.edu/bachelors](http://lowercolumbia.edu/bachelors)  
 (360) 442-2311

You can earn your bachelor's degree via Distance Education through LCC's partnerships with universities such as Washington State University, Franklin University, Argosy University, Capella University, Northcentral University, University of Phoenix and City University. Each of these fully-accredited universities will accept your LCC Associate in Arts degree for junior status.

**WSU Cowlitz-Wahkiakum Learning Center**  
[learningcenters.wsu.edu/Cowlitz](http://learningcenters.wsu.edu/Cowlitz)  
 (360) 442-2941

Through the WSU Learning Center on the LCC campus, you can earn a B.A. degree in Education, Business Administration, Human Development, Criminal Justice, Social Sciences, or Humanities; or a B.S. in Nursing. The Center even offers a master's in Engineering Management, a post-master's School Psychology certificate, and a full-immersion Summer Spanish Institute. The WSU Learning Center offers live-taught, satellite, video and online courses, with an excellent computer lab available to all WSU students.



## Apprenticeship Programs

**(360) 442-2336**

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: <http://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 Tech Prep program (see page 13) 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.

If you are a registered apprentice in a program supported by LCC or have questions regarding programs supported by the College, call (360) 442-2336.

## Business and Industry Services

**[lowercolumbia.edu/biz](http://lowercolumbia.edu/biz)**

**(360) 442-2601**

Lower Columbia College 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 **Workplace Skills 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, Six Sigma and lean manufacturing, business computer applications, customer service, and other areas critical to organizational success.

## Community Education & Prime Time

**[lowercolumbia.edu/justforfun](http://lowercolumbia.edu/justforfun)**

**(360) 442-2841**

LCC's Community Education and Prime Time programs offer a variety of non-credit short-term and online classes, seminars and workshops. **Community Education** courses are designed for busy adults who want personal enrichment, professional development and/or recreation. No state resources are used for these courses. **Prime Time** courses are designed to meet the special needs and interests of people 55 and older. With offerings from computers to yoga, you can add spice to your life and socialize with other seniors. Classes are held on campus and at churches, retirement centers and other locations in the community. Community Education and Prime Time courses, fees and registration procedures are listed in the quarterly class schedule.

## Cooperative Education

**(Credit for Work Experience)**

**[lowercolumbia.edu/workexperience](http://lowercolumbia.edu/workexperience) (360) 442-2332**

Cooperative Education allows you to earn credit for learning through supervised work experience. This work-based learning program helps integrate theories, concepts and methods studied in the classroom with practical application in a work environment. The term "cooperative" refers to the relationship between the student, the college faculty and the employer.

You may earn one credit for every 30 hours of work, applying up to 15 Cooperative Education credits toward an associate's degree, while in a job related to your program of study at LCC. The job can be paid or unpaid, and Work-Study jobs may qualify. Most LCC programs have established Cooperative Education course numbers (288/289). To enroll, you must have permission from an instructor in your program of study and receive entry codes for registration



each quarter from the Cooperative Education office, located in the Admissions Center's Career & Employment Services office. You may take up to 5 credits of Cooperative Education per quarter, with 1–4 credits for on-site cooperative work experience (288) and 1 credit for the required Cooperative Education Seminar (289), which focuses on work-related topics and complements the work-based learning experience. Independent Study (299) credits also count toward the 15-credit maximum.

## Distance Education

**lowercolumbia.edu/online** (360) 442-2520

LCC continues to develop a growing list of courses you can take from home or elsewhere. The term "distance education," sometimes referred to as "guided studies," describes courses offered over the Internet, as well as televised, correspondence or CD tutorial courses. This innovative approach to education can help you complete your course work at times more convenient for you. In addition to art, social sciences, science, math, Spanish, business, music, health and English courses developed for distance education by our faculty, LCC participates in the cooperative Washington Online effort to deliver courses over the Internet. These courses, taught by faculty from many of Washington's community colleges, are listed in LCC's quarterly class schedules.

## Evening Option

LCC offers a schedule of courses that allows you to complete your Associate in Arts degree through evening classes. We have made evening easier with our new hybrid classes, which combine traditional "face time" with online instruction and discussion. Most students taking evening classes finish their associate's degree in 12 to 15 quarters. However, you can earn an Associate in Arts degree in as little as three years by completing 10 evening credits each fall, winter, and spring quarter. Always consult with a program advisor to make sure you are taking the right classes. For more information, stop by the Admissions Center or go to [lowercolumbia.edu/evening](http://lowercolumbia.edu/evening).

## Head Start/Early Childhood Education & Assistance Program

**lowercolumbia.edu/headstart** (360) 442-2800

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

Children may attend classes three or four days per week for 3-1/2 hours a day during the school year, or attend the full-day, full-year program. A variety of developmentally appropriate learning experiences are provided to foster social, emotional, intellectual and physical growth.

Head Start/ECEAP supports you in your role as prime educators of your children, and you are encouraged to attend weekly group parent meetings and to volunteer at the centers. Head Start/ECEAP offers you many opportunities to participate in all program activities and program decision-making. Parents may register in HOFL 131, 132 and 133 for college credit.

## Healthcare Training

**lowercolumbia.edu/healthcaretraining**  
(360) 442-2620

Lower Columbia College provides short-term courses for persons interested in training as a caregiver or nursing assistant. For caregivers, a variety of fundamental and continuing education courses are offered under arrangement with the Southwest Washington Agency on Aging. Nursing assistant courses prepare students to take exams to become certified (Nursing Assistant-Certified) as per Washington State requirements.

## Human Development (HDEV)

These specialized classes provide opportunities for students to develop personal and life skills and to explore career options, learn leadership techniques, study interpersonal relations, and

## Home & Family Life

**lowercolumbia.edu/hofl** (360) 442-2890

Lower Columbia College Home and Family Life Early Learning Center offers inclusive childcare/preschool for children 1 month through 6 years of age. Full-day and half-day rates are available. DSHS accepted. USDA-approved breakfast, lunch and snacks provided. The Early Learning Center is open weekdays from 7:45 a.m. to 5 p.m. This service is available to LCC students attending classes and/or participating in work-study. LCC staff and faculty may also access the Home and Family Life services. Student parents must register for Home & Family Life credits, choosing from a number of options.

The center also offers a Pre-Kindergarten program, which runs Monday–Thursday from 8:30 a.m. to 12. This program prepares children to enter public school Kindergarten. The Pre-K program is available to children of LCC students/LCC staff and faculty/community.



strengthen their abilities to set goals, make decisions and work effectively with others. Human Development courses are designed to encourage individual growth. Besides a variety of basic skills and behavior-related courses, students may also earn college credits for participating in student government, whether as an officer, committee member or volunteer. Human Development course listings begin on page 96.

## Independent Study

Independent Study (courses usually numbered 299) includes projects, research, or study in specialized areas not currently offered in LCC classes. In unusual circumstances, you may take a regular college class on an independent study basis, with permission of the instructor. You may apply up to 15 credits, combined, of Cooperative Education and Independent Study toward your associate's degree. Written permission of the instructor is required. For information, call the Registration Office at (360) 442-2370.

## Individual Development (INDV)

**(360) 442-2570**

These pre-college level classes will help you build basic reading, writing, spelling, mathematics and study skills. Most Individual Development classes are offered in the Learning Center, where students work through the course material with help from tutors and instructors. In addition to reading and writing basics, you can get help with test taking, note taking, textbook reading, vocabulary building, essay writing, and reviewing basic arithmetic skills such as fractions and decimals. These arranged classes are listed in the quarterly course schedule. Some INDV classes meet on a regular basis in a classroom setting and they are also listed in the quarterly schedule. See pages 98-100 for course descriptions.

## Individualized Certificate Program (ICP)

**lowercolumbia.edu/icp (360) 442-2332**

The Individualized Certificate Program offers you an opportunity to pursue a custom-designed work-based learning program that is not available through current apprenticeship or college programs. You will work closely with the ICP program manager to ensure that courses meet the program requirements. See page 52 for detailed program information.

## Integrative Studies:

### A Learning Community

An Integrative Studies (IS) offering examines a central theme from the perspective of different disciplines. Compared to the traditional segmented system of study, IS students and instructors meet and work together in larger blocks of time. Extending the time students and instructors spend together promotes the trust, self-confidence and cooperation that enhances learning. Integrative Studies provides students with ease of scheduling and increased coherence in their instructors. An IS student, however, registers for an integrated block of classes providing credits from two or more disciplines.

## High School Programs

### Running Start

**lowercolumbia.edu/runningstart (360) 442-2352**

About 300 students participate in Running Start at Lower Columbia College each quarter. Through Running Start, qualified high school juniors and seniors may earn both high school and college credits by attending college classes. If you qualify, you may enroll in a full range of professional/technical and academic courses for university or college transfer. You will attend regular Lower Columbia College classes during the school day or in the evening. Upon satisfactory completion of the course requirements, you will get college credit that is fully transferable to most colleges and universities. Credits also apply to your high school diploma according to individual school district policy. To be admitted to the Running Start program, you must place into college-level work, participate in an orientation and apply by the published deadline. For more information or to apply, contact the Lower Columbia College Running Start Office or your high school counseling office.

### Tech Prep/High School Articulation

**lowercolumbia.edu/techprep (360) 442-2331**

Tech Prep is a combined high school and college program leading to an associate's degree or apprenticeship certification that provides technical preparation in a selected field of study. If you are in high school, you may earn free college credit when you earn a B or better in a Tech Prep course offered at your school. Check your high school course catalog for specific career-technical education (CTE) courses listed as Tech Prep. Earning Tech Prep credit while in high school gives you 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 your high school CTE instructor or counselor about Tech Prep or contact the Tech Prep Office at LCC.

## Pre-College & Basic Studies

### Adult Basic Education (ABE)

**lowercolumbia.edu/abe (360) 442-2580**

If you are 16 years or older and need to review or learn basic skills for college entrance, employment, or preparation for the General Education Development (GED) exam, LCC offers you non-credit Adult Basic Education classes. These classes are designed to improve basic reading, writing and math skills, with basic computer skill classes also available. Before enrolling in these low-cost Adult Basic Education courses, you will take an assessment class to place you at the right level of instruction. Classes are available at LCC, the LCC Woodland Center and at Kelso WorkSource. Courses are listed on page 63.



## Career Education Options (CEO)

[lowercolumbia.edu/ceo](http://lowercolumbia.edu/ceo) (360) 442-2582

If you left high school without a diploma, this educational recovery program gives you the chance to return to school to restart your education and improve your career opportunities. You are eligible if you are between the ages of 16 and 21, not currently in high school, and do not have a high school diploma. You may have a GED and still be eligible.

All new Career Education Options (CEO) students take daily classes covering life skills, study skills, career exploration, resume preparation, computer literacy and basic skills. You will be encouraged to achieve a GED while taking courses that satisfy high school graduation requirements. You may also earn a college certificate or degree in a professional or technical field at LCC. If you qualify, CEO will provide tuition, books, tutoring, and one-on-one help with clarifying educational and career goals. For more information or to apply, call or visit the CEO office in the Vocational Building.

## English as a Non-Native Language (ENL)

[lowercolumbia.edu/enl](http://lowercolumbia.edu/enl) (360) 442-2576

Classes for non-native students help to build skills in listening, speaking, reading, writing and grammar. Four levels of instruction are offered in each area and students proceed at their own pace. Each ENL course emphasizes the culture and expectations of the American classroom. Courses are listed on page 90.

## English as a Second Language (ESL)

[lowercolumbia.edu/esl](http://lowercolumbia.edu/esl) (360) 442-2580

LCC offers low-cost classes to help non-English-speaking adult immigrants learn English skills. The program emphasizes life skills and communication skills including speaking, listening, reading, writing, grammar, citizenship and computers. Classes also include information on life in the community, civics, cultural topics, family literacy and work skills. Students take a short placement test during

the first class to determine the appropriate entry levels. Classes are available days and evenings at LCC, the LCC Woodland Center and Kelso WorkSource, and various other sites. Courses are listed on page 90. Call for more information.

## General Education Development (GED)

[lowercolumbia.edu/ged](http://lowercolumbia.edu/ged) (360) 442-2580

Lower Columbia College is an official GED testing center. If you did not finish high school, you may earn high school credentials by taking this series of five tests. We also offer practice and instruction to help you pass the GED test. You will review and get 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, the LCC Woodland Center and at Kelso WorkSource.

## High School Diploma

[lowercolumbia.edu/hsdiploma](http://lowercolumbia.edu/hsdiploma) (360) 442-2330

**High School Diploma**—If you wish to take courses at LCC to complete requirements for a diploma from your high school, you may enroll in High School Completion courses (listed on pages 94-95) or regular courses, as determined by your high school. See also the information about the Running Start program on page 13.

**Adult High School Diploma**—Adults who have not completed high school may also work toward a high school diploma at the College. Applicants should evaluate their high school and college transcripts with the help of an LCC counselor. The counselor will identify the courses needed to satisfy the requirements for an adult high school diploma from LCC and the State of Washington.

Washington residents who are at least 19 years old may be eligible to enroll for required courses with reduced tuition. Students under the age of 19 may need permission to enroll from their high schools. See also the information about the Running Start program on page 13.

### Required Courses

(in high school semester credits)

English	6
U.S. History and Government	2
Washington State History	1
Mathematics	4
Contemporary World Problems	2
Laboratory Science	4
Occupational Education	2
P.E./Health	4
Fine/Performing Arts	2
Electives	<u>11</u>
<b>Total</b>	<b>38</b>



## Admission

All new students must apply for admission. If you are interested in taking classes at LCC, start at the Entry Center, which is located in the lobby of the Admissions Center. The Entry Center staff will give you information on enrolling for classes, placement testing, course information, GED testing, and advising. You are welcome to call or stop by to begin the enrollment process or to get information and assistance. For more information, call (360) 442-2311 or email [info@lowercolumbia.edu](mailto:info@lowercolumbia.edu)

Certain programs may require special testing or training before enrollment, but all students working toward degrees follow these four steps:

1. Get an Application for Admission from the Registration Office, an LCC Admissions representative, any area high school, or online at [lowercolumbia.edu/applynow](http://lowercolumbia.edu/applynow)
2. Complete the Application for Admission and return it to the LCC Registration Office.
3. Make arrangements for your high school(s) to send your transcript(s) to the LCC Registration Office.
4. Request that any college you previously attended send complete, official transcripts to the LCC Registration Office.

Complete an evaluation request form at the Registration Office. Once the transcript is evaluated, you and your advisor will be sent the results. The Transfer Center (see page 4) also has course equivalency information.

LCC will mail you a letter of acceptance and information on how to enroll. International students, see the International Student Admission section on this page or [lowercolumbia.edu/international](http://lowercolumbia.edu/international) for information on admission and programs that serve you.

## Co-Admission to WSU-V

Planning to transfer from LCC to WSU Vancouver? Now it is easier than ever, as you can be admitted to LCC and WSU Vancouver at the same time. If you meet WSU's freshman admission criteria, you can be co-admitted as an incoming freshman. You can also be co-admitted as a transfer to WSU-Vancouver and continue your studies at LCC, once you become "transfer-eligible" with satisfactory completion of 40-60 transferable credits. For more information on WSU-V degree options and Co-Admission, contact the LCC Entry Center, (360) 442-2311, or go to [lowercolumbia.edu/coadmission](http://lowercolumbia.edu/coadmission)

## High School and Younger (Special Admissions)

If you are in high school, you may enroll in LCC courses with the approval of your high school principal and an LCC counselor or through the Running Start Program. See the High School Diploma, Running Start, and Tech Prep sections on pages 13 and 14 for information about enrolling in LCC through these programs. If you

are younger than high school age, see the Registrar to begin the special admission process.

## International Student Admission

International students who are interested in attending Lower Columbia College need to request application materials from the International Student Admissions Coordinator. To be eligible for admission, you must be a high school graduate or equivalent at the time of enrollment, submit a satisfactory TOEFL (Test of English as a Foreign Language) score, show proof of financial security for one year, and give evidence of ability to succeed in studies at LCC.

You may be required to take pre-college English courses before you can enroll in transfer level academic classes.

International students must complete at least 12 credit hours per quarter with a minimum GPA of 2.00. If you don't meet this requirement, you will be subject to dismissal from the College and will be out of status with the Department of Homeland Security. You must also provide proof of health insurance and repatriation coverage while enrolled at LCC.

Services for international students include orientation, academic advising, housing information, field trips, ENL (English as a Non-Native Language) classes, and participation in International Student Club activities. Students should plan to arrive in Longview two weeks before the quarter's classes begin to find suitable housing. Financial aid and student loans are not available to international students, and most scholarships require U.S. citizenship.

ENL courses (see page 90) are designed to meet your English language needs, to develop the language skills necessary to participate in regular Lower Columbia College courses, and to learn about American culture, helping you adjust to the Pacific Northwest. Entrance to these courses is based on TOEFL test scores, as well as LCC's Placement Assessment scores. Students on F-1 or M-1 visas get enrollment priority.

Students will meet with an international student advisor each term for course advising and progress checks.

For more information on LCC's international student programs, phone (360) 442-2300 or go to [lowercolumbia.edu/international](http://lowercolumbia.edu/international)

## Welcome Sessions

You will get details about the admission process in one of LCC's welcome sessions, which include a brief overview of financial aid, placement assessment, advising, registration, cashiering, textbooks, and tips for success. Most incoming students attend the 20-minute welcome session just before taking the placement assessment. Welcome sessions are provided weekdays, on the hour, from 8 a.m. to 4 p.m., from September to mid-June, and from 7 a.m. to 5 p.m. Monday–Thursday, from mid-June through August. For more information, call (360) 442-2311.



## Placement Assessment

If you plan to seek a degree or certificate, or transfer to a four-year institution, you must take the placement assessments before enrolling. Placement assessments in reading, mathematics, English, and study skills will help you select the right courses for your needs and interests. LCC uses nationally-normed tests designed for use by community college students. You will get your results and course recommendations right away. Advisors use these placement results and course recommendations to help you plan your class schedules. Placement recommendations must be followed, although you may re-test once and appeal to the Director of Advising and Testing for higher placement.

Placement assessments, given every day, are arranged through the Entry Center. You must pay the placement assessment fee before testing begins. Phone (360) 442-2311 for more information.

## Advising

Academic advising is one of Lower Columbia College's most important student services. You will get information, support, and guidance from individual faculty and entry advisors while planning your own education. Advisors, who are assigned based on their particular knowledge in the student's stated area of interest or major, provide information about general college programs and procedures, plus advice on specific course selection.

All students who plan to earn a degree or certificate at LCC or who plan to transfer to a four-year institution must meet with an advisor before registering for each quarter's classes. New students' advising appointments are coordinated at the Entry Center and the Advising and Testing Office. Returning students contact their faculty advisors to plan a schedule and receive their quarterly online registration PIN. If you need help contacting your faculty advisor, call or stop by the Entry Center, in the Admissions Center at (360) 442-2311. You may request a change of advisor through the same office.

Program planners for most majors are available from the Advising and Testing Office in the Admissions Center and online at [lowercolumbia.edu/programs](http://lowercolumbia.edu/programs)

Even if you are not seeking a degree or planning to transfer, you may request help from an advisor through the Entry Center. Online advising is available at [lowercolumbia.edu](http://lowercolumbia.edu)

## Registration

Register for classes at the Registration Office, as soon as you have seen your advisor. The Registration Office is located in the Admissions Center. In future quarters, you can register online after meeting with your advisor and obtaining your quarterly registration PIN.

Check the quarterly class schedule for registration dates and deadlines. The quarterly class schedules are published before each quarter's registration begins. Registration at LCC is prioritized so that degree and certificate seeking students closest to graduation, who have met with their faculty advisors, register before newer

students. Be sure to discuss alternative classes with your advisor, since some of the classes you want may fill before you register. Online registration is available after your first quarter. Be sure to request a global PIN at the Registration Office, so you can access your records and do other business online at [lowercolumbia.edu/kiosk](http://lowercolumbia.edu/kiosk) To register at KIOSK, you also need your quarterly registration PIN from your advisor.

You must register by the fifth day of instruction. Changes for students placed in the wrong English, Human Development, Individual Development, Mathematics and Physical Education classes are allowed through the tenth day of instruction.

Complete registration details and deadlines are published in the quarterly class schedule. For information about registration procedures, see the class schedule, call the Registration Office at (360) 442-2370, email [registration@lowercolumbia.edu](mailto:registration@lowercolumbia.edu)

## Payment

After you register, pay your quarterly tuition by the due date. If you will use financial aid to pay, finalize your paperwork in the Financial Aid Office, then see the Cashier in the Admissions Center.

You may pay with cash, check, Visa, MasterCard, or with an approved scholarship, waiver, or financial aid. You can also pay online. Ask at the Cashiering Office for details.

More information about tuition and fees, residency and tuition waivers begins on page 18. The latest tuition and fee amounts are posted at [lowercolumbia.edu/tuitionandfees](http://lowercolumbia.edu/tuitionandfees)

## Tuition Deferments

If you can't pay at the time of registration, you may be able to buy a tuition deferment to reserve your classes. Deferments cost \$35. When you pay your tuition and fees, \$25 of the deferment fee will be applied to tuition costs. If you don't pay your tuition in full by the deferment due date, you will forfeit the entire deferment fee. Tuition deferments are not refundable.

## Purchasing Textbooks & Supplies

Lower Columbia College Bookstore, located in the Student Center, has the textbooks and supplies you will need. For more information, call the LCC Bookstore at (360) 442-2240. You can also order books online at <http://lowercolumbia.edu/bookstore>

## Orientation

To learn more about the various activities and services available at LCC, as well as the processes, rules, and regulations of the College, attend an orientation session. These sessions are offered before classes begin or during the first week of instruction. You will have the chance to ask questions and meet other new students. For information and schedules, call (360) 442-2311.



## Online Registration & Future Quarters

To help get the classes you need, when you need them, watch for the quarterly class schedules (online or printed) and make an appointment with your faculty advisor to plan your class schedule and get your quarterly registration PIN. You can then enroll for fall, winter and spring classes online or in person, according to your registration priority. (Students who are closest to earning their degrees or certificates get to register before newer students.) Be sure to get a global PIN at the Registration Office, so you can check your registration date and time, access your records, register, pay tuition and more at [lowercolumbia.edu/kiosk](http://lowercolumbia.edu/kiosk). Be sure to pay your tuition on time!

## Schedule Changes

After you register, here's how to change your schedule:

- Online through the 3<sup>rd</sup> day of each quarter OR
- Get a Change of Registration form from the Registration Office and fill it out.
- If you are seeking a degree or certificate, get your advisor's signature. To drop a science lab class, get the instructor's signature too.
- Return the form to the Registration Office by the published deadline.

## Withdrawal

You may withdraw from some or all of your classes through Friday of the eighth week of the quarter. If the class ends before the regular quarter ends, you may withdraw through the last day of class. If you drop out of a class without withdrawing, you will remain on the roster and receive a poor grade.

To withdraw, get the proper form from the Registration Office, consult with the instructor if possible, obtain your advisor's signature (if withdrawing during the first seven weeks), and return the completed form to the Registration Office. If you complete the withdrawal procedure, you will receive a grade of W ("withdrawal") for the course.

If you don't attend any classes during the first five instructional days of the quarter or contact the instructor, you may be withdrawn from the class(es). You will then receive a grade of V (vanished) for the course(s).



## Tuition & Fees

Tuition at Lower Columbia College is set by the Washington State Legislature and may change according to the State's budget situation. We've listed 2007-08 rates here. For the latest tuition and fee information, check at the LCC Admissions Center or online at [lowercolumbia.edu/tuitionandfees](http://lowercolumbia.edu/tuitionandfees)

### How much will you pay?

#### Resident Students (Column A)

Washington Resident students must verify that they have lived in Washington for one year and have established residency in the State of Washington, including US Citizenship. If your residency cannot be determined at the time of registration, you will be required to pay non-resident tuition and fees. Ask about residency at the Registration Office, (360) 442-2370. Complete residency rules are detailed in RCW 28B.15.012.

Even if you are not a permanent resident or US Citizen, you may be eligible for reduced tuition, if you 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. Contact the Registrar at (360) 442-2371.

#### Oregon Border County Residents (Column B)

Residents of Oregon Border Counties (Columbia, Clatsop, Multnomah, Washington) for 90 days or more may pay this rate.

#### US Citizens & INS Permanent Residents (Column C)

Individuals who have lived in the State of Washington for 90 days or more and who are US Citizens or Permanent Residents, as defined by the INS, may pay this rate.

#### Other US Citizens and Foreign Students (Column D)

Those who are not eligible to pay the "Resident Students," "Oregon Border County Residents," or "US Citizens and INS Permanent Residents" rates, above, pay this rate.

#### Veterans (Column E)

Special rates are available for some Veterans. See the Veterans' Office in the Admission Center, or call (360) 442-2393 for eligibility information.

#### 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. Please note: The special audit rate applies to credit classes only.

### Tuition Waivers

You may be eligible for reduced tuition or fees if you are a:

- Lower Columbia College employee
- Classified state employee or Washington Public Higher Education Employee
- Student seeking a high school diploma
- Persian Gulf veteran
- Iraqi Freedom veteran
- Afghanistan veteran
- Student enrolled in more than 18 credits of vocational classes
- Washington National Guard member
- Running Start student (see page 13)

Contact the Registration Office at (360) 442-2370 for details.

2007 / 2008 Tuition and Fee Schedule					
(Facilities Use, Technology, Tutor Center, and Gym Upgrade fees included)					
	A	B	C	D	E
Credits	Wash State Residents	Oregon Border Residents	US Citizens & INS Permanent Residents	Foreign & US Citizens Who Don't Meet Req's	Veterans
1	80.40	86.35	102.55	252.10	61.80
2	160.80	172.70	205.10	504.20	123.60
3	241.20	259.05	307.65	756.30	185.40
4	321.60	345.40	410.20	1,008.40	247.20
5	402.00	431.75	512.75	1,260.50	309.00
6	482.40	518.10	615.30	1,512.60	370.80
7	562.80	604.45	717.85	1,764.70	432.60
8	643.20	690.80	820.40	2,016.80	494.40
9	723.60	777.15	922.95	2,268.90	556.20
10	804.00	863.50	1,025.50	2,521.00	618.00
11	836.30	898.20	1,060.95	2,557.10	643.00
12	868.60	932.90	1,096.40	2,593.20	668.00
13	898.40	965.10	1,129.35	2,626.80	690.50
14	928.20	997.30	1,162.30	2,660.40	713.00
15	958.00	1,029.50	1,195.25	2,694.00	735.50
16	987.80	1,061.70	1,228.20	2,727.60	758.00
17	1,017.60	1,093.90	1,261.15	2,761.20	780.50
18	1,047.40	1,126.10	1,294.10	2,794.80	803.00
19	1,114.25	1,198.90	1,383.10	3,033.35	853.10
20	1,181.10	1,271.70	1,472.10	3,271.90	903.20
21	1,247.95	1,344.50	1,561.10	3,510.45	953.30
22	1,314.80	1,417.30	1,650.10	3,749.00	1,003.40
23	1,381.65	1,490.10	1,739.10	3,987.55	1,053.50



## Residency

The Washington State Legislature and the Higher Education Coordinating Board require all higher education institutions in Washington to follow stringent requirements and procedures in determining a student's residency classification. The statute couples the length of time a student has resided in the State of Washington with whether he or she is financially dependent or independent.

The Registration Office will make an initial determination of your residency status from the information on your admission application and notify you if you have been classified as a nonresident at the time of registration.

To request a review of your nonresident status or apply for reclassification, 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 you to prove your residency, and inadequate or erroneous documentation may result in denial of reclassification for that particular quarter.

## 2007-08 Miscellaneous Fees

- **Application:** All new students are charged a \$13.60 application fee. After three years of non-attendance, this fee will be recharged.
- **Apprenticeship:** \$37 per credit; \$2.47 per clock hour. Add technology fee of \$2.50/credit, facilities fee of \$.60/credit, tutoring center fee of \$.50/credit and fitness center upgrade fee of \$2.50/credit.
- **Computer Lab:** A fee of \$9.60 per class (\$9.60 max. per student) is charged for certain classes identified in the course listing section.
- **Facilities Maintenance:** The chart includes a fee of \$.60/credit, up to 18 credits (max. \$10.80), for facilities maintenance and College security.
- **Fitness Center Upgrade:** The chart includes a fee of \$2.50/credit, up to 10 credits (max. \$25), for fitness center upgrade.
- **GED Testing:** \$75 for first time on all five. Re-testing: \$15 per test.
- **High School Completion:** Courses taken to earn a high school diploma are \$37.15 per credit for residents or \$74.30 per credit for non-residents; plus a Technology fee of \$2.50/credit, Facilities fee of \$.60/credit, Tutoring Center fee of \$.50/credit and Fitness Center Upgrade fee of \$2.50/credit.
- **Lab:** Nonrefundable lab fees are collected for certain classes. Where applicable, this fee is shown with class listings in this schedule. Most Distance Education courses require a Distance Ed fee.
- **Placement Assessment:** \$13.60 for placement tests.
- **Resident Excess Credit:** Residents pay \$66.85 per credit above 18 credits.

- **Technology:** The chart includes a technology fee of \$2.50/credit, up to 12 credits (max. \$30). 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:** \$4.00 fee for each official transcript.
- **Tuition Deferment:** Qualified students may purchase a tuition deferment for \$35. While the fee is nonrefundable, \$25 is applied toward tuition upon full payment.
- **Tutoring Center:** The chart includes a fee of \$.50/credit, up to 10 credits (max. \$5), to support the Tutoring Center.
- **Vocational Excess Credit:** Vocational students taking over 18 credits who meet certain requirements pay only \$7 per credit (residents); non-residents over 18 credits pay \$28.

## Payment of Tuition & Fees

You can pay your fees and tuition in-person, by phone, or online at [lowercolumbia.edu/kiosk](http://lowercolumbia.edu/kiosk). LCC accepts checks, cash, debit cards, Visa, and MasterCard.

## 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 listed 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 Community Education classes; details are in the quarterly class schedule.

## State Support of Higher Education

The State of Washington covers much of the cost of your community college education. Instructional costs per fulltime-equivalent student were estimated at \$6,192 for the 2006–07 academic year, with the state providing \$4,119 per FTE, and student tuition covering the remainder. The State also provided an average of \$638 in financial aid per resident student for 2006–07. The most recent figures on state support are posted at [lowercolumbia.edu/statesupport](http://lowercolumbia.edu/statesupport)



## Financial Aid

Need some help paying for college? For information, applications and help with financial aid, stop by the Lower Columbia College Financial Aid Office in the LCC Admissions Center or go to [lowercolumbia.edu/finaid](http://lowercolumbia.edu/finaid)

Financial aid includes many different options, such as scholarships, grants, student employment, loans, veterans' assistance and even special programs that can help you pay for tuition, fees, books and supplies, room and board, transportation and personal expenses. The Financial Aid Office staff can help sort it all out and determine what type of financial aid is right for you.

The Financial Aid Office is open weekdays from 8 a.m. to 5 p.m. Evening appointments may be arranged. (Hours/days change for summer.) For general financial aid information, stop by, call (360) 442-2390 or go to [lowercolumbia.edu/finaid](http://lowercolumbia.edu/finaid)

## Scholarships

It is not as hard as you might think to get a scholarship. LCC awards about \$300,000 in scholarships each year, many of them funded through the LCC Foundation. They consider many different criteria—such as your field of study, academic excellence, citizenship, leadership, community involvement or financial need—so don't assume you don't qualify.

Get LCC scholarship information and applications in the Financial Aid Office or online at [lowercolumbia.edu/scholarships](http://lowercolumbia.edu/scholarships). Most applications are due in mid-April.

Top drama, forensics and music students are eligible for quarterly scholarships. Information and applications are available at the Financial Aid Office, online at [lowercolumbia.edu/scholarships](http://lowercolumbia.edu/scholarships), from the LCC faculty members supervising these programs, or from area high school faculty and counselors.

To get a need-based scholarship, you need to fill out the Free Application for Federal Student Aid (FAFSA). It is available at the LCC Financial Aid Office or online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). LCC's federal school code is 003782. Allow three weeks for processing. You will also need to provide proof of income for the previous year, such as a tax return or agency statement.

LCC Booster Club athletic scholarships and partial tuition waivers are offered to a limited number of LCC athletes. For more information, contact the LCC Athletics director at (360) 442-2471.

If you are returning to college after an absence of three or more years, you could get a Second Start scholarship. For more information, contact the LCC Counseling Office at (360) 442-2330.

Outside businesses, organizations and clubs offer more scholarships and assistance. To learn more, contact the Financial Aid Office at (360) 442-2392.

Research other scholarships online at [fastweb.com](http://fastweb.com), [finaid.org](http://finaid.org), [collegenet.com](http://collegenet.com) and other sites.

## Grants

Grants, which usually don't have to be repaid, are often offered with Work-Study authorization or a loan. The College participates in the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, and the Washington State Need Grant programs.

Grant amounts vary based on your family's ability to pay for college and your enrollment status.

To be eligible for these grants, you must be a U.S. citizen, legal immigrant, or a citizen of certain trust territories. You also need to enroll in a qualifying academic program, maintain satisfactory academic progress, and demonstrate financial need, as determined by a federal formula. You must not be in default on a federal educational loan, owe a repayment to a federal educational grant program, or have a drug conviction. If you are an 18 to 26-year-old male, you must have registered with Selective Service.

To apply for a grant, complete the Free Application for Federal Student Aid (FAFSA) for the appropriate academic year. First, apply for a personal identification number (PIN) at [www.pin.ed.gov](http://www.pin.ed.gov). You may apply online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov) or fill out a paper application. Allow for at least three weeks of processing time. Also complete the Financial Aid Personal Data sheet, available at the Financial Aid Office, Entry Center or online at [lowercolumbia.edu/finaid](http://lowercolumbia.edu/finaid). For more information, phone (360) 442-2390.

If you withdraw or stop attending classes before completing 60 percent of a quarter, you may have to repay part of your grant.

## Student Employment

You may also qualify for student employment through the Federal Work-Study, Washington State Work-Study, Temporary Aid to Needy Families (TANF) Work-Study or LCC Student Help programs. Jobs may be on or off campus.

To be authorized for federal and state work-study, which are need-based, you must complete the Free Application for Federal Student Aid (FAFSA).

LCC also offers a limited number of part-time student jobs on campus through the Student Help and TANF Work-Study programs. Jobs in your field of study may also be available for Cooperative Education (see page 11) credit. For more information on student employment, phone (360) 442-2393. Jobs are posted at [lowercolumbia.edu/hireconnections](http://lowercolumbia.edu/hireconnections)



## Student Loans

Loans should be your last resort, as they must be repaid. If you need a student loan, we can help you apply. The College participates in the Federal Stafford Loan program (offering a subsidized loan based on financial need and an unsubsidized loan that is not need-based) and for parents the Federal Parent Loan for Undergraduate Students (PLUS).

To receive any type of loan, you must first apply for a Pell Grant using the Free Application for Federal Student Aid (FAFSA). The maximum loan amount depends on your need, dependency, and year in college. You must complete a loan worksheet, and attend a loan counseling session, complete a loan quiz and submit a loan worksheet. PLUS applicants use a separate application.

For more information, contact the student loan coordinator at (360) 442-2393.

## Veterans' Assistance

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 rate and other help. Learn more at the Veterans Office in the financial aid area, (360) 442-2393. Current veterans' tuition rates are posted at [lowercolumbia.edu/tuitionandfees](http://lowercolumbia.edu/tuitionandfees)

## Worker Retraining

Unemployed and underemployed workers, as well as displaced homemakers, may receive help with tuition and other education expenses. Phone (360) 442-2336 for more information.

## Keeping Your Financial Aid

To continue receiving financial aid, you must meet the College's satisfactory academic progress standards, available at the Financial Aid Office counter. If you fail to meet these standards—listed with each financial aid initial award letter—you may be placed on financial aid probation or lose your financial aid. Contact the Financial Aid Office staff at (360) 442-2390 for more information.

## Reinstating Your Financial Aid Eligibility

If your financial aid eligibility was canceled or terminated at LCC or another institution, you may request that your financial aid eligibility be reinstated once you have met the standards for reinstatement. For information on the reinstatement process, contact the Financial Aid Office staff at (360) 442-2390.

## Paying Your Tuition

After you finalize your Financial Aid paperwork, you can request an administrative hold from the financial aid staff until the first week of class, or until a date approved by the Finance Office.

## Hope Tax Credit

You may be able to obtain a tax credit for some of your education expenses. LCC will send you a cost statement at the end of the year.



## General Education Outcomes

In 2007, Lower Columbia College Faculty developed the following set of outcomes for LCC students. The outcomes describe the knowledge, skills and abilities that the College expects all students to possess by the time they earn their associate degree. The College regularly evaluates student progress in these areas to help plan improvements and ensure quality in every area.

### Citizenship

*Contribute* to the betterment of the community through participation, volunteer work, personal/civic respect for the environment and our fellow species, as well as for humans.

1. Students will participate in the governmental process; for example, in the electoral, legislative, or judicial process.
2. Students will participate in community organizations.
3. Students will participate in public or campus discourse on an issue.
4. Students will demonstrate knowledge of and respect for the environment in both local and global contexts.

### 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.

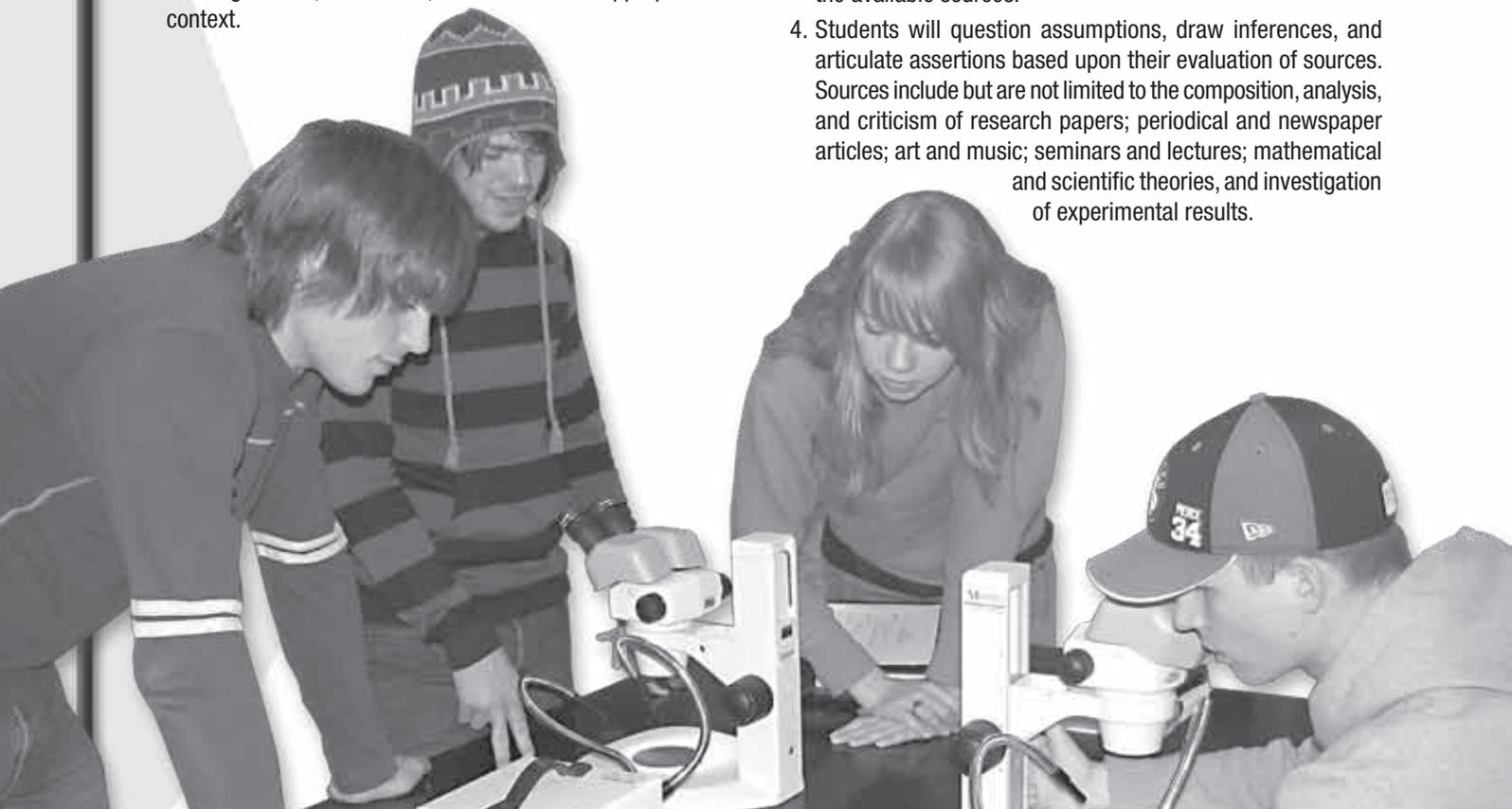
1. Students will write in complete sentences, demonstrating use of grammar, mechanics, and word choice appropriate to context.

2. Students will compose paragraphs with a single topic and present ideas in a clear and organized manner.
3. Students will use computer databases, the internet and other technology to gather, process, and communicate information.
4. Students will include appropriate evidence and document sources to support arguments and research.
5. Students will comprehend materials from diverse disciplines and applications.
6. Students will speak in a clear, logically organized and credible manner using effective verbal structure, word choice and delivery.

### Critical Thinking\*

*Gather* information from a variety of sources, make judgments about the validity of the information, and draw inferences from the information.

1. Students will integrate and synthesize a variety of sources including but not limited to print, electronic, and broadcast media; visual images and artifacts; observations; and experiments.
2. Students will question the validity of sources assessing for depth, range, context, opposing views, currency, reproducibility, consistency, bias, and originality.
3. Students will identify and consider the influence of context on the available sources.
4. Students will question assumptions, draw inferences, and articulate assertions based upon their evaluation of sources. Sources include but are not limited to the composition, analysis, and criticism of research papers; periodical and newspaper articles; art and music; seminars and lectures; mathematical and scientific theories, and investigation of experimental results.



## Interpersonal Skills\*

*Interact* effectively with individuals and within groups.

1. Students will receive, consider, and respond appropriately to verbal and non-verbal cues.
2. Students will communicate effectively and work cooperatively with a group.
3. Students will apply appropriate techniques for resolving conflicts and dealing with differences in a variety of settings.

## Multiculturalism

*Develop* an understanding of the world as a community through the study of diverse groups in society.

1. Students will examine how people define themselves and others as members of various social, ethnic, and cultural groups.
2. Students will analyze global issues from multiple perspectives and make connections between the local and global community.
3. Students will demonstrate knowledge of multiple perspectives and interpretations of cultures and histories.
4. Students will recognize how forms of artistic expression reflect the culture and values of the artists.

## 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 inference from graphical and numerical data.
2. Students will apply quantitative skills for personal, academic, and career purposes.
3. Students will determine whether conclusions or solutions are reasonable, based on numerical, algebraic, or graphical reasoning.
4. Students will communicate numerical and mathematical processes using appropriate symbols, language, and terminology.

## Problem Solving\*

*Apply* various techniques and processes using information, data or situations, to produce logical, rational, ethical, and coherent solutions.

1. Students will identify and define primary problems or issues.
2. Students will collect relevant information, data, or details concerning problems and issues.
3. Students will analyze problems or issues using appropriate techniques or processes.
4. Students will evaluate and implement solutions based on the criteria of logic, ethical principles, and coherence.

\* In 2005-06, the LCC Capstone Committee identified *Problem Solving*, *Interpersonal Skills*, *Communication and Critical Thinking* as integral components/outcomes of the capstone experience. *Numeracy* was also adopted as an optional capstone outcome.



**At Lower Columbia College, you can train for a career in a high-demand field, earn the first two years of a bachelor's degree or just take a few classes for the pleasure of learning. In this section we have listed fields of study you can pursue at LCC. Some are full career programs, and some just a few introductory classes to let you sample a field, add some skills or fulfill general education requirements for your degree. Information about specific degrees and certificates starts on page 29.**

## Accounting

Accounting is a critical business function offering many career opportunities. A 2-year degree can prepare you for entry-level positions such as accounting technician, accounts payable clerk, accounts receivable clerk, payroll clerk or tax preparer. Or take LCC's transfer accounting courses to complete the first 2 years of a bachelor's degree to become qualified for additional career opportunities. The transfer accounting program can lead to careers as a Certified Public Accountant (CPA), Chartered Management Accountant (CMA) and other positions performing the work related to audits, tax accounting, financial management and planning, and budget analysis. LCC's Accounting programs begin on page 35.

## Anthropology

You can start a 4-year degree with an emphasis in Anthropology at LCC, going on to specialize in the diverse fields of archaeology, social and cultural anthropology, linguistics, culture and personality, or human biology. Graduates may seek a position in teaching, research, museum work, Foreign Service, or other areas.

## Architecture

Architecture is a 4- or 5-year program at most colleges and universities. Architecture majors can complete general education requirements for some accredited architecture programs and take drawing/drafting courses at Lower Columbia College. Students should work closely with an LCC advisor and examine a catalog or other materials from the school to which they plan to transfer. Students should take one year of general education and drawing/drafting courses at LCC and plan to transfer at the end of their freshman year.

## Art

Whether you are planning to major in art, need humanities credit, or are studying art for personal enrichment, LCC's art courses — both lab and lecture — are designed to provide a comprehensive educational experience. Art majors who want careers in fine arts, interior design, graphic arts, or photography should work closely with their LCC faculty advisors and the college, university, or art school to which they plan to transfer.

## Automotive Technology

The Automotive Technology Associate in Applied Science degree program will prepare you for a job with a future in many areas of the automotive field, including brakes, suspension and alignment, automotive electrical, engine rebuilding, transmission repair, and fuel systems/emissions/tune-up work. Opportunities are available at dealerships, independent garages, fleet shops, service stations and specialty shops. Already working in the field? Enhance your skills to get a better job by taking one class or the entire program. See Page 36 for program details.

## Biological Sciences

At LCC you can prepare for a wide range of occupations and transfer to degree programs at four-year institutions. See an advisor from this area to plan a program in fisheries, wildlife biology or management, biological education, environmental studies, microbiology, medical technology, pre-veterinary medicine, or a related area. LCC offers several transfer degrees that may interest you. See Biology Education (page 36), General Science Education (page 61), and Bioengineering and Chemical Engineering (page 48).

## Business

Business classes open many doors, whether you plan to eventually earn an MBA, or just want to take a few classes to help you get a better job or run your own business. LCC offers several transfer and professional degree and certificate programs in Accounting, General Business, Business Management and Retail Management. See an advisor to pick the program that's right for you. Accounting program information begins on page 35 and other Business programs on page 37. See other options under Business Technology.

## Business: Management Information Systems

If your goal is a degree in Management Information Systems (MIS) at a 4-year college or university, select LCC equivalent courses as defined by your target college. Contact your advisor for information about equivalent courses. With a 4-year degree, you will be qualified to develop, use, and maintain information systems that will support management decision-making.

## Business Technology

Earn an Associate of Applied Science degree or certificate to prepare for a job in a modern medical, legal, agency, or business office. LCC's BTEC programs use both traditional classroom teaching and individualized instruction in a lab setting. Students acquire communication, business math, and human relations skills in addition to office and computer skills. Program details begin on page 39.



### Chemical Dependency Studies

Prepare to work as a healthcare provider to clients who are experiencing chemical abuse/dependence. You will get a solid working knowledge in LCC's professional degree program. Program details on page 41.

### Chemistry, Chemical Engineering

Today's chemists and chemical engineers work in laboratory operations, manufacturing firms, research, mid-management in chemical companies, environmental services, and other areas. Analysts or technicians assist scientists in general lab work or process control. You can earn a general transfer degree tailored to your chosen field or transfer institution; an Associate in Sciences (option 1) transfer degree (see page 31); or a specialized MRP transfer degree in Chemistry Education (page 42), or Bioengineering and Chemical Pre-Engineering, (page 48).

### Computer-Aided Design

Earn a Certificate of Proficiency in Computer Aided Design to get CAD skills for an entry-level job in construction or manufacturing, or apply your Drafting classes to a future bachelor's degree in Architecture or Engineering.

### Computer Science

Many jobs in the information technology field now require a bachelor's degree. LCC's transfer Computer Science program provides solid core courses in math, programming, applications, operating systems, microprocessors, and digital design for those planning a bachelor's degree. LCC's Associate in Applied Science technical degrees and certificates prepare students for entry-level employment in networking, data security, and applications. Computer Science program details begin on page 43. Also, see Computer and Electrical Pre-Engineering on page 48.



### Criminal Justice (was Administration of Justice)

The Criminal Justice program prepares students to transfer to a four-year institution to complete a bachelor's degree, required for state or federal employment in law enforcement. Many local law enforcement and public services agencies require a 4-year degree for advancement.

Modern law enforcement is a highly competitive career field; the more education you have, the greater your chance of employment and advancement. You can prepare for entry-level employment in law enforcement agencies and in some correctional facilities with an Associate in Applied Science Degree with an emphasis on Criminal Justice. People working within those areas can use the program to enhance their skills. Program details begin on page 44.

### Diesel and Heavy Equipment Technology

Earn an LCC technical degree or certificate to prepare for a wide variety of careers servicing or repairing trucks, heavy equipment, and industrial equipment. Excellent job opportunities are available for those with the technical know-how to repair and maintain mechanical, electrical, and hydraulic systems. Current employees may take classes to brush up their skills or get a better job. Program details begin on page 45.

### Drama

The Drama (theatre) program includes classes of general interest to all students, as well as classes for students planning to earn a bachelor's degree in drama. Drama students select a program within their particular areas of interest, with seminars and special projects available for qualified students. A major production is presented each quarter.

### Early Childhood Education

You can prepare for a career working with little children at many levels at LCC. Start your bachelor's degree as the first step toward a research or teaching career or administrative position. Earn an LCC professional degree or certificate to train to work in a preschool, childcare center, Head Start program or licensed in-home day care. Professional program details begin on page 46.

### Earth Sciences: (Astronomy, Geology, Oceanography)

Earth sciences careers include positions with government agencies and private industry, independent consulting, teaching, and basic research. Earth Sciences include a broad range of disciplines: astronomy, geology, meteorology, and oceanography. See also Biological Sciences, Geography and Geology.



## Economics

Economics is the study of resource use in relation to production and distribution of wealth. Economics study is important to students interested in business, law, finance, government services, and social service. If you plan to major in Economics at a 4-year college or university, work with your advisor to select courses matching those required at your target college.

## Education

If you want to teach—whether it is grade school or high school, math or science—you can choose from several LCC programs. Information on LCC Education transfer degrees and paraeducator certification begins on page 47.

## Engineering

LCC's engineering program provides a strong basic background for successful transfer to a four year college, with option of building more immediately marketable engineering skills. You can prepare to enter such engineering fields as aeronautical, chemical, civil/environmental, computer, electrical, manufacturing, materials, and mechanical engineering. Possible careers include research, development, design, operations management, teaching, sales, and consulting.

LCC offers several engineering transfer degree programs. Typical transfer programs will include full-year courses in calculus, calculus-based physics, and engineering sciences, along with additional

supporting courses in mathematics, computer languages, and other sciences, plus communications and social science/humanities general education courses. Details begin on page 48.

## English

English courses meet communications and humanities requirements for students earning associate's degrees, and they provide cultural enrichment electives. LCC offers classes in composition, creative writing, literature, and journalism. If you plan to major in English at a 4-year college or university, work with your advisor to select courses matching those required at your target college.

## Environmental Studies

Career opportunities in Environmental Sciences include positions in government agencies and private industry, independent consulting, teaching, and basic research. If you are interested in a career in Environmental Sciences, refer to the Catalog sections on Biological Sciences and Earth Sciences.

## Fire Science

Prepare for a job or advancement in modern fire service with an LCC Fire Science professional degree or earn a certificate in fire prevention, fire inspection, fire investigation or public education. Details on LCC Fire Science programs begin on page 50.

## Foreign Languages

Foreign language courses meet humanities requirements for students earning associate's degrees and provide cultural enrichment electives. LCC offers two full years each of French and Spanish, as well as courses in Spanish for the workplace. If you plan to major in Foreign Languages at a 4-year college or university, work with your advisor to select courses matching those required at your target college.

## Geography

Career opportunities in Geography (a major component of earth sciences) include positions in government agencies and private industry, independent consulting, teaching, and basic research. See also Earth Sciences, Environmental Studies, and Natural Resources.

## Geology

Careers in Geology (a major component of earth sciences) include positions in government agencies and private industry, independent consulting, teaching, and basic research. See also Biological Science, Earth Sciences, and Natural Resources.

## Health Occupations

Learn the medical terminology and legal, safety and cultural information you need to succeed in an entry-level health care occupation with LCC's short-term certificate program. Details begin on page 51.



## History

History courses support economics, political science, and other majors. Those who earn a bachelor's degree in history often choose government service, education, and other research careers.

## Industrial Maintenance

Working in industry? Enhance your on-the-job experience with technical and theoretical background in LCC's electrical, mechanical and power utility degree and certificate programs. You could also just take a few classes to add the skills you want. Details begin on page 52.

## Instrumentation and Control

Instrumentation and Control skills are key in many industrial, manufacturing, heating and air conditioning, electronics, and other technical jobs. Prepare for an entry-level job or, if you are already working in the industry, add the skills you need with an LCC technical degree or certificate. Details begin on page 53.

## Journalism

You will get experience in writing hard news, features, sports, and editorials in LCC journalism classes. Instruction focuses on theories, techniques, structure, and style of writing. If you plan to major in Journalism at a 4-year college or university, work with your advisor to select courses matching those required at your target college.

## Law (Pre-Law)

Accredited law schools ordinarily require students to hold a bachelor's degree to be admitted. At LCC, you should plan to enroll in courses that are related to legal reasoning, including history, economics, English, political science, or any of the social sciences. Work closely with your advisor and your chosen transfer college.

## Machine Trades

Prepare for a job as a machinist, millwright, tool and die maker, or another job related to manufacturing through LCC's Machine Shop program. LCC offers a technical degree, plus machinist, manufacturing occupations and Computer Numerical Control (CNC) certificates. Details begin on page 54.

## Mathematics

Complete the first two years at LCC toward a bachelor's degree in Mathematics at a four-year college. Math courses also supplement and enhance engineering, chemistry, physics and other natural sciences, and business programs. For information on LCC's specialized Associate in Math Education degree, see page 56.

## Medical Assisting

Prepare for a career working with physicians and other healthcare providers, helping in the office or laboratory, with an LCC professional degree or certificate. Details begin on page 56.

## Medical Professions

Medical professional careers are varied and challenging and require years of advanced study. Medical coursework is rigorous, and entrance into professional schools is very competitive. LCC students who are planning to study medicine, dentistry, or veterinary medicine must complete at least 12 credits in biology, 18 credits in chemistry, and 12 credits in physics. Some schools require a foreign language. It is important to work with your advisor and consult an advisor at your intended transfer institution.

## Music

Music courses and musical activities are designed to serve both those planning a bachelor's or career in music and the general college student. For the music major, jobs are primarily in music education and professional performance. If your general transfer degree focuses on music, you will be expected to participate in the musical organizations appropriate to your performing medium and to take private lessons (applied music) for your primary instrument. LCC's Contemporary Musicianship and Audio Production technical degree (see page 57) focuses on musicianship and digital audio production skills.

## Nursing

Prepare for a nursing career through LCC's excellent Nursing Program. We even offer an online program for LPNs who want to move up to RN. Many LCC Nursing grads fulfill their general education requirements here and go on to earn Bachelor of Science in Nursing degrees. Details begin on page 58.

## Philosophy

If you plan to major in Philosophy at a 4-year college, select courses matching the requirements of your target institution. LCC Philosophy courses focus on methods and systems of reasoning, critical examination of philosophic answers to questions of values and obligations, and justification of ethical beliefs.

## Photography

If you are planning a career in photography, work closely with your faculty advisors and the college, university, or art school to which you plan to transfer. LCC offers beginning, intermediate, and advanced classes in photography, as well as opportunities for independent study.

## Physical Education

Careers in fitness, coaching, health promotion, exercise science, education, and athletic training available to Physical Education bachelor's program graduates. You could also minor in community services, leisure activities, resources, therapeutic recreation, outdoor recreation, program supervision, and commercial recreation after transferring to a four-year college.



## Physics

The primary goal of physics is discovering the fundamental principles and fundamental particles necessary to describe the behavior of the universe. These fundamental explanations are conveyed as elegant statements of sweeping power, which can be applied in other fields, the results often being crucial to solution of eminent engineering problems.

A bachelor's degree in physics provides excellent preparation for more advanced study in astronomy and astrophysics, atmospheric science, biophysics, chemical physics, computer science and engineering, engineering and engineering physics, geophysics, medicine, meteorology, and optics. Professional careers include research and development positions with government, university, or private industrial laboratories /research institutes, as well as with observatories and science museums. You could also teach high school or community college, or at a college or university.

If you are planning a bachelor's in physics or physics education, LCC offers three main options: the new Associate in Physics Education AS-T/MRP degree (details on page 59); Associate in Sciences Transfer Degree (Option Two, page 31); or the Associate in Arts and Sciences Degree (page 30). Typical transfer programs will

include full-year courses in calculus, calculus-based physics, and chemistry, along with additional supporting courses in mathematics, engineering, computer languages, astronomy and other sciences, plus communications and social science/humanities distribution courses.

## Political Science

The political scientist concentrates on the philosophy, structure, and actual workings of existing forms of government. Career opportunities exist in law, private business, public administration, nonprofit organizations, and teaching. If you are working toward a transfer degree, it is important to work closely with your advisor and the college to which you plan to transfer.

## Pulp and Paper Technology

Prepare for a career in today's high-tech pulp and paper industry. LCC offers both a technical degree program and short-term certificate. Details on page 60.

## Psychology

A psychology major may work in personnel or as a guidance counselor, school psychologist, clinical psychologist, social worker, or educator. Psychology courses are especially useful for students majoring in health sciences, social sciences, business, and law. If you are working toward a transfer degree, it is very important to work closely with your advisor and the college to which you plan to transfer.

## Sociology

Sociology—the study of the origin, development, organization and functioning of human society—will serve you well in many careers, such as social work, public opinion research, public relations, journalism, guidance and counseling, education, community planning or personnel relations. If you are beginning a bachelor's degree in sociology, it is very important to work closely with your advisor and the college to which you plan to transfer.

## Speech

LCC's Speech program provides general education courses for students who wish to improve their understanding of communication and their communication skills, as well as the opportunity for intercollegiate debate competition. If you are working toward a transfer degree, it is very important to work closely with your advisor and the college to which you plan to transfer.

## Welding

Prepare for a good job in construction, repair, manufacturing or instruction—and prepare for the state commercial welding exam—with an LCC technical degree or certificate. LCC also welcomes students who just want to take a class or two for job advancement or fun. Details begin on page 62.



## Degrees & Certificates

The following lists the degree and certificate options at Lower Columbia College.

### University Transfer

**AA – Associate in Arts and Sciences** – Transfer degree

**AAS-T – Associate in Applied Science** – Transfer degree

**AA-DTA – Associate in Arts degree** – Direct Transfer Agreement

**AB-DTA/MRP – Associate in Business degree** –  
Direct Transfer Agreement (Major Related Program)

**AEE-DTA/MRP – Associate in Elementary Education** –  
Direct Transfer Agreement (Major Related Program)

**AM-DTA/MRP – Associate in Math Education degree** –  
Direct Transfer Agreement (Major Related Program)

**AT-DTA/MRP – Associate in Technology** –  
Direct Transfer Agreement (Major Related Program)

**AS-T-Option 1 – Associate in Science** –  
Transfer degree (Opt 1) – Biology, Environmental Science,  
Chemistry, Geology, and Earth Science

**AS-T ABE/MRP – Associate in Biology Education** –  
Transfer degree (Major Related Program) (Opt 1)

**AS-T ACE/MRP – Associate in Chemistry Education** –  
Transfer degree (Major Related Program) (Opt 1)

**AS-T APE/MRP – Associate in Physics Education** –  
Transfer degree (Major Related Program) (Opt 1)

**AS-T AGSE/MRP – Associate in General Science Education**  
– Transfer degree (Major Related Program) (Opt 1)

**AS-T-Option 2 – Associate in Science** –

Transfer degree (Opt 2) – Engineering, Engineering  
Technology, Computer Science, Physics, and Atmospheric  
Sciences

**AS-T BIO/CHEM E/MRP – Associate in Bioengineering and  
Chemical Engineering** –  
Transfer degree (Major Related Program) (Opt 2)

**AS-T COMP E EE/MRP – Associate in Computer and  
Electrical Engineering** –  
Transfer degree (Major Related Program) (Opt 2)

**AS-T OTHER ENGINEER/MRP – Associate in Mechanical/  
Civil/Aeronautical/Industrial/Materials Science  
Engineering** – Transfer degree (Major Related Program)  
(Opt 2)

**AS-T EET/CTE/MRP – Associate in Electrical Engineering  
Tech and Computer Engineering Tech** –  
Transfer degree (Major Related Program) (Opt 2)

**AS-T MET/MRP – Associate in Mechanical Engineering  
Technology** –  
Transfer degree (Major Related Program) (Opt 2)

### Professional/Technical

**AAS** – Associate in Applied Science degree

**COP** – Certificate of Proficiency (specialized one-year  
occupational training, 45 or more credits).

**COC** – Certificate of Completion (short-term occupational  
training, 1-44 credits).



## Transfer Degrees

Lower Columbia College's transfer degrees allow you to complete the first two years of a bachelor's degree at LCC. The Major Related Program (MRP) degrees build on these to provide specific preparation to enter bachelor programs in 13 high-demand fields. While requirements for LCC graduation and acceptance at a four-year college vary by degree type, field, and college, you must fulfill these general requirements to earn an LCC transfer degree:

### General Requirements

- 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.
- 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.
- Diversity requirement—5 credits. See quarterly schedule for diversity classes. Courses that meet this requirement may also be used toward other graduation requirements. Unless otherwise stated, Washington Online courses do not satisfy this requirement.

### AA — Associate in Arts and Sciences

The program-specific AA transfer degree is for students who are sure of the four-year institution they wish to attend. If you plan to earn a bachelor's degree in a professional field this may be a good option for you. You must work closely with your program advisor to design a program that will fulfill the transfer institution's general admission and program entry requirements. You should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. Your program advisor and the appropriate department chair must approve your intended program, and you must file your intent to earn this degree when you apply for graduation from LCC.

### AA — General Degree Requirements

General requirements listed for transfer degrees, plus:

- Communications requirement—15 credits ENGL& 101, ENGL 102 or ENGL& 235 (was ENGL/ENGR 220), and SPCH 110.
- Courses as prescribed by the faculty advisor and approved by department chair.

### AAS-T — Associate in Applied Science - Transfer

The AAS-T degree is built upon the technical courses required for job preparation and includes a college-level general education component. Baccalaureate institutions are not required to accept AAS-T degrees. The AAS-T does not fulfill general education requirements for a baccalaureate degree. Transferability of an AAS-T degree to a given baccalaureate institution is neither implied nor guaranteed. Each institution has its own transfer policies and each student is responsible for knowing the transfer and admission requirements of the receiving institution. Students are urged to check with their advisor at Lower Columbia College and a representative from the college they plan to attend.

### AA-DTA — Associate in Arts - Direct Transfer Agreement

This degree, considered a general transfer option, is recommended as a starting point for students who plan to transfer but are unsure of their major when they first enter college. The AA-DTA is widely accepted as the first two years towards a bachelor's degree by public institutions in Washington, some in Oregon, and by most private institutions in Washington. In any degree program, you should work closely with your program advisor to ensure that you are taking the proper courses. Students should also try to complete sequence courses within one institution (i.e., BIOL 201, 202, and 203).

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 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.

### AA-DTA — General Degree Requirements

- Communications requirement—15 credits ENGL& 101, ENGL 102, and SPCH 110.
- Quantitative/symbolic reasoning skills requirement—5 credits. MATH 099 or proficiency, AND one of the following: BUS 206 (was BSAD 206), ENGR& 214 (was ENGR 122) or ENGR& 215 (was ENGR 261); MATH 112 or higher (excluding MATH 121); PHIL 120; or PHYS 101, 102, 103, 251, 252, or 253.

**& = Course is part of the Washington Community Colleges' Common Course Numbering system.**



- 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.
- 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.
- Natural Science requirement—15 credits from at least three areas on the Distribution List for Transfer Degrees. No more than 10 credits from any one discipline; must include 5 credits of lab courses. No more than 5 credits from Math, Computer Science, and Engineering. If a course is used to fulfill the quantitative skills requirement, it may not be used to satisfy the natural science requirement.
- Capstone requirement—5 credits. These courses require students to demonstrate the knowledge, skills, attitudes, and values expected of students earning the AA-DTA. Courses that meet this requirement may also be used toward other graduation requirements and will be designated in course schedules. To enroll, students must have completed at least 60 credits toward the AA-DTA degree, including MATH 099 (or competency) and ENGL 102, both with a grade of C- or better.
- 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.

## DTA/MRP — Degree Requirements

- Check with your LCC advisor and a representative from the college you plan to attend for specific degree requirements.

## AS-T — Associate in Science — Transfer

The AS-T degree is designed to prepare students for upper division study in science-related fields. It will give students the broad background needed before beginning more specialized, upper-division courses. Degrees structured under the AS-T umbrella provide:

- Priority admissions consideration at public universities for most science and engineering majors ahead on non-degreed transfers.
- Completion of similar lower division general education requirements as first- and second- year university students in engineering or science-based fields.
- Credit for all courses completed within the AS-T up to and in some cases beyond 90 credits.
- Opportunity to explore other fields within the electives included in the degree.

### 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 General Degree Requirements

- 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 as follows:
- General requirements listed for transfer degrees, plus:
- Communications requirement—ENGL& 101 (5 credits).
- Mathematics requirement—MATH& 151 and 152 (10 credits).
- Humanities/Social Sciences requirement—15 credits.
- “Learning Experience” course that demonstrates knowledge, skills, attitudes, and values. Program advisor must approve—5 credits.
- Pre-major program courses specific to the appropriate track.
- Remaining courses specific to the appropriate track—10-15 credits.

## AS-T/MRP — Degree Requirements

- Check with your LCC advisor and a representative from the college you plan to attend for specific degree requirements.



## Distribution List for Transfer Degrees:

### Humanities

ART& 100 (was ART 110) or ART 114, and ART 101\*, 102\*, 103\*, 106\*, 107\*, 111\*, 112\*, 113\*, 119, 151\*, 152\*, 206, 207, 208, 226, 227, 228, 241\*, 242\*

DRMA& 101 (was DRAM 100), and DRMA 106\*, 107\*, 108\*, 215, 255  
ENGL 124\*, 125\*, 126\*, 204, 205, 224\*, 225\*, 226\*, 231, 232, 233, 234, 239 (was 235), 240, 245, 251, 252, 254, 256, 260, 270, and ENGL& 235 (was ENGL/ENGR 220)

FRCH& 121, 122, 123, (was FREN 101, 102, 103), and FRCH 110 or 114

HIST& 116 (was HIST 106), HIST& 126 (was HIST 116)

HUMN 110, 164, 165, 166, 210, 230

JOURN 200

LIBR 101

MUSC 100, 101, 102, 103, 117, 119, 130\*, 134\*, 135\*, 140\*, 144\*, 150\*, 209, and MUSC& 105 (was MUSC 110)

PHIL& 101 (was PHIL 200), and PHIL 210, 260

SPAN& 121, 122, 123, (was SPAN 101, 102, 103), and SPAN 110 or 114

SPAN& 221, 222, 223 (was SPAN 201, 202, 203)

SPCH 104, 109, 204, 205, 210

### Social Sciences

ANTH& 206 (was ANTH 207)

BUS& 101 (was BSAD 110), BUS& 201 (was BSAD 251)

CJ& 101 (was ADMJ 186)

ECON 105 or ECON& 201 (was ECON 205), ECON 105 or ECON& 202 (was ECON 206), and ECON 208

HLTH 106

HIST& 117 (was HIST 107), HIST& 127 (was HIST 117), HIST& 128 (was HIST 118), HIST& 136 (was HIST 156), HIST& 137 (was HIST 157), and HIST 205, 254

POLS 107, and POLS& 202 (was POLS 106), POLS& 203 (was POLS 108)

PSYC& 100 (was PSYC 111), PSYC& 200 (was PSYC 205), PSYC 204, 214, and 220

SOC& 101 (was SOCY 110), and SOC 209 and 210

### Natural Sciences

ANTH& 205 (was ANTH 206)

ASTR 110\*\*

BIOL& 100\*\*, BIOL& 170 (was BIOL 120), and BIOL 130\*\*, 150\*\*, 201\*\*, 202\*\*, 203\*\*, 221\*\*, 222\*\*

BUS 206, 207 (was BSAD 206, 207)

CHEM 105\*\*, 120, and CHEM& 121\*\*, 131\*\* (was CHEM 111\*\*, 112\*\*), CHEM& 161\*\*, 162\*\*, 163\*\* (was 151\*\*, 152\*\*, 153\*\*)

CS 170 (was CIS 180), and CS 270 (was CIS 280)

ERSI 104\*\* or 105 or GEOG 105\*\*

ENGR 210

ENVS 120, 130\*\*, 150, 200, 210

GEOL 105\*\* or 116\*\* or 117\*\*, 118\*\*, 170\*\*

MATH& 107 (was MATH 130), MATH& 148 (was MATH 140), MATH& 151, 152, 153, and MATH 112, 113, 122, 125, 150, 154, 210, 211, 220, 240

OCNG 140\*\*

PHIL 120

PHYS& 100\*\*, and PHYS 101\*\*, 102\*\*, 103\*\*, 210

### Restricted Course List

ACCT 101, 150, 241, 294

AH – all courses

APPEL—all courses

ADT—all courses

ITEC—all courses

BLPT—all courses

BUS 104 (was BSAD 104), BUS 119 (was BSAD 190), BUS 165 (was BSAD 115), BUS 250 (was BSAD 250), BUS 259 (was BSAD 111), BUS 294

BTEC—all courses

CDS—all courses except CDS 101

CS (was CIS) 100, 101, 102, 104, 105, 106, 107, 108, 109, 110, 111 (was 150), 121 (was 120), 122 (was 220), 130, 144, 175 (was 185), 211, 212, 213, 216, 230, 245 (was 251), 249 (was 252), 281 (was 282), 282 (was 283), 285 (was 235)

COLL 100

DRFT—all courses

ECED 105, 115, 126, 127, 128, 205, 219, 260

ELEC—all courses

ENGL 100

FISC—all courses

HOFL—all courses

HDEV—all courses

IMT – all courses

INDV—all courses

INTC—all courses

JOURN 110, 120, 130, 200, 210, 220, 230

MASP—all courses

MATH 105, 106

METC—all courses

MEDA—all courses

MFG—all courses

NURS—all courses

PULP—all courses

TECH—100, 170

WELD—all courses

\* Performance-based course

\*\*Lab course

Waived courses are subject to the 15-credit maximum.

**& = Course is part of the Washington Community Colleges' Common Course Numbering system.**



## Diversity Courses\*

ANTH& 206 (was ANTH 207)—Cultural Anthropology  
 ART& 100 (was ART 110)—Art Appreciation  
 ART 206—Arts of the Americas  
 ART 207—Arts of the World  
 ART 208—Arts of the Northwest  
 BIOL 150—Human Genetics and Society  
 BUS 144 (was BSAD 126)—Management of Human Relations  
 BUS 150 (was BSAD 164)—Customer Service/Management  
 DRMA& 101 (was DRAM 100) —Intro to Theatre  
 EDUC& 205 (was EDUC 110)—Introduction to Education w/Field Experience  
 ENGL 204—The Novel (intermittent Cultural Diversity course)  
 ENGL 205—Film and Drama Appreciation  
 ENGL 245—Contemporary Literature  
 ENVS 150-Environment and Society  
 HIST& 126 (was HIST 116) – World Civilizations I  
 HIST& 127 (was HIST 117) – World Civilizations II  
 HIST& 128 (was HIST 118) – World Civilizations III  
 HUMN 110—Introduction to Cultures  
 HUMN 210—Myths and Rites  
 MUSC& 105 (was MUSC 110)—Music Appreciation  
 MUSC 117—Music Cultures of the World  
 MUSC 119—American Music  
 MUSC 209—The Blues Culture  
 SOC& 101 (was SOCY 110)—Introduction to Sociology (includes WAOL's SOC& 101)  
 SOCY 209—Sociology and the Family  
 SPAN& 121 (was SPAN 101)—Spanish I  
 SPAN& 122 (was SPAN 102)—Spanish II  
 SPAN& 123 (was SPAN 103)—Spanish III  
 SPCH 109—Intercultural Communication

\*Courses may be added to this list on a quarterly basis. Check quarterly schedules for diversity course designations. Unless otherwise stated, Washington Online courses do not satisfy the Cultural Diversity Requirement.

## Professional/Technical Degrees & Certificates

### AAS — Associate in Applied Science

This degree is not generally considered a transfer degree, although exceptions may be allowed for certain programs upon approval. AAS degrees provide occupational training that prepares you to enter the workforce with a solid education and specific skills. Representatives from local business and industry help define these degree programs so our graduates meet the standards defined by people actually in the workforce.

### Degree Requirements

- Minimum of 90 credits in courses numbered 050 and above, including:
- Communications requirement—5 credits. ENGL 100, ENGL& 101, ENGL 102, or 110; BUS 119 (was BSAD 190); or SPCH 110.
- Health requirement—2-5 credits. HLTH 100 or 106; NURS 101; or MEDA 161 or 162.
- Computational requirement—5 credits. MATH 092 or higher or BUS 104 (was BSAD 104).
- Human Relations requirement—2-5 credits. ANTH& 206 (was ANTH 207); BUS 144 (was BSAD 126), BUS 150 (was BSAD 164), or BUS 240 (was BSAD 240); CDS 102 or 215; ECED 119; HDEV 110; NURS 101 or 202; PSYC& 100 (was PSYC 111), PSYC 204, or 214; SOC& 101 (was SOCY 110); 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.
- Diversity requirement—5 credits. See quarterly schedule for diversity classes. Courses that satisfy this requirement may also be used to satisfy other graduation requirements. Unless otherwise stated, Washington Online courses do not satisfy this requirement.



## COP — Certificate of Proficiency

This is generally considered a one-year program, although class scheduling may affect the actual length of time required. Specialized occupational courses are combined with requirements in communications, social science/human relations, and computational skills to provide a well-rounded experience that prepares you for entry-level work in a chosen field. Since many of the classes meet general education requirements, many students choose to continue and earn an associate's degree in the same or similar field.

### Certificate of Proficiency Requirements

45 credits or more, including:

- Communications requirement—5 credits.
- Computational requirement—5 credits.
- Social Science/Human Relations requirement—5 credits.

Some programs also have a Natural Science and/or Health requirement.

## COC — Certificate of Completion

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's degree.

## Distribution List for Associate in Applied Science (AAS)

### Humanities

All courses from the Distribution List for Transfer Degrees, plus SPCH 110, and ENGL 102.

### Natural Sciences

All courses from the Distribution List for Transfer Degrees, except mathematics courses, plus CHEM 100, MFG 130, and TECH 100.

### Social Sciences

All courses from the Distribution List for Transfer Degrees, plus BUS 144 (was BSAD 126), and HOFL 131, 132, 133.

## Degree & Certificate Descriptions

*What will it take to earn your LCC degree or certificate? How will you be able to use that education? Below, we've listed the many degrees and certificates we offer.*

*For information on the transfer degree requirements, see pages 30-32. Work closely with your advisor to craft the transfer degree that works best for you and the bachelor's program that you choose.*

<u>Description</u>	<u>Page</u>
<b>Accounting</b>	<b>35</b>
<b>Automotive Technology</b>	<b>36</b>
<b>Biology Education</b>	<b>36</b>
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<b>Medical Assisting</b>	<b>56</b>
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<b>Pulp &amp; Paper Manufacturing Technology</b>	<b>60</b>
<b>Science Education</b>	<b>61</b>
<b>Technology</b>	<b>61</b>
<b>Welding</b>	<b>62</b>



## Accounting

You will learn basic skills to compete for entry-level accounting positions such as accounts payable and accounts receivable in private industry, state, and local government, and public accounting.

### Program of Study: Accounting Technician

#### Degree: AAS — Associate in Applied Science

##### General Education Requirements

###### Communication Requirement:

BUS 119 (was BSAD 190) Business Communications *or*  
ENGL& 101 English Composition I 5

###### Computation Requirement

MATH 092 Elementary Algebra 5

###### Human Relations /Social Sciences/Diversity Requirement

BUS 144 (was BSAD 126) Management of Human Relations 5

###### Humanities or Natural Sciences Requirement:

From distribution list 5

###### Health Requirement

HLTH 106 Health Today *or*  
HLTH 100 Occupational Safety and Health 2-3

##### Program Requirements

ACCT 101 Introduction to Accounting Concepts 5  
ACCT 150 Payroll Accounting and Business Tax Reporting 5  
ACCT& 201 (was ACCT 231) Prin of Accounting I 5  
ACCT& 202 (was ACCT 232) Prin of Accounting II 5  
ACCT& 203 (was ACCT 233) Prin of Accounting III 5  
ACCT 241 Computerized Accounting Concepts 4  
ACCT 288/289 Cooperative Education 5  
BUS& 101 (was BSAD 110) Intro to Business *or*  
ECON& 201 (was ECON 205) Micro Economics 5  
BUS& 104 (was BSAD 104) Business Math Applications 5  
BUS& 201 (was BSAD 251) Business Law 5  
BTEC 130 Electronic Calculators 2  
BTEC 145 Word Processing I 3  
CS 111 (was CIS 150) Intro to Windows 4  
CS 121 (was CIS 120) Introduction to Spreadsheets 5  
CS 130 (was CIS 130) Introductory Database Appl. 5

**Total Credits 90-91**

#### Degree: AAS-T — Associate in Applied Science — Transfer

##### General Education Requirements

###### Communications Requirement

ENGL& 101 English Composition I 5

###### Computation Requirement

MATH 112 College Algebra 5

###### Social Science Requirement

BUS& 201 (was BSAD 251) Business Law 5

###### Natural Science & Humanities Requirement

5 cr. each in Natural Sciences and Humanities,  
chosen from the distribution list 10

###### Human Relations Requirement

BUS 144 (was BSAD 126) Management of Human Relations 5

##### Program Requirements

ACCT 101 Introduction to Accounting Concepts 5  
ACCT 150 Payroll Accounting and Business Tax Reporting 5  
ACCT& 201 (was ACCT 231) Prin of Accounting I 5  
ACCT& 202 (was ACCT 232) Prin of Accounting II 5  
ACCT& 203 (was ACCT 233) Prin of Accounting III 5  
ACCT 241 Computerized Accounting Concepts 4  
ACCT 288-289 Cooperative Education 5  
BUS 150 (was BSAD 164) Customer Service/Management 5  
BTEC 130 Electronic Calculators 2  
BTEC 145 Word Processing I 3  
CS 111 (was CIS 150) Intro to Microcomputer Op. Systems 4  
CS 121 (was CIS 120) Introduction to Spreadsheets 5  
CS 130 (was CIS 130) Introductory Database Applications 5  
HLTH 100 Occupational Safety and Health 3

**Total Credits 91**

**& = Course is part of the Washington Community Colleges' Common Course Numbering system.**



## Automotive Technology

The Automotive Technology program is an LCC option to prepare you for employment in the automotive repair industry. You will study classroom theory and receive extensive hands-on experience. To graduate, you must successfully complete ASE task competencies set by local standards and the National Automotive Technician Education Foundation (NATEF), an arm of the National Institute for Automotive Service Excellence (ASE).

### Degree: AAS — Associate in Applied Science

#### General Education Requirements

##### Communications Requirement

ENGL 110 Industrial Communications recommended 5

##### Computation Requirement

MATH 092 Elementary Algebra or higher, (MATH 106 Industrial Mathematics recommended) 5

##### Human Relations/Social Sciences/Diversity Requirement

BUS 144 (was BSAD 126) recommended 5

Natural Sciences Requirement (TECH 100 recommended) 5

HLTH 100 Occupational Safety and Health 3

#### Program Requirements

You may complete some of these requirements through an approved high school Tech Prep program.

ADT 100	Essentials of Mechanics	5
ADT 101	Electrical Systems I	5
ADT 102	Electrical Systems II	10
ADT 104	Vehicle Climate Control	6
ADT 111	Hydraulic Brakes	5
ADT 112	Advanced Brakes	3
ADT 121	Gas Engines I	5
ADT 122	Gas Engines II	10
ADT 201	Fuels and Emissions	10
ADT 202	Computerized Engine Controls	10
ADT 215	Suspension and Alignment	8
ADT 216	Automatic Transmission	8
ADT 217	Power Trains	6
Electives	Select from list below	1-15

#### Total Credits

**115-129**

*Electives*—Select electives to meet individual needs:

ACCT 101, ADT 108, 200, 299, BUS& 101 (was BSAD 110), CS 110 (was CIS 110), IMT 131, WELD 151, 152, 221.

## Biology Education

### Program of Study: Undergraduate Studies for Future Secondary Biology Teachers

#### Degree: AS-T ABE/MRP — Associate in Biology Education — Transfer degree (Opt 1)

Note: For this degree, specific grade requirements vary from course to course and among transfer institutions. The student will need to check with transfer advisors. Some baccalaureate institutions require physics with calculus. It is your responsibility to check your baccalaureate institution's specific major requirements the year prior to transferring.

#### Program Requirements

##### Communications Requirements

ENGL& 101 English Composition I 5

ENGL 102 English Composition 5

##### Mathematics Requirements

MATH& 151 Calculus I 5

MATH& 152 Calculus II 5

MATH 210 Elements of Statistics 5

(Pre-Calculus cannot be used to satisfy the mathematics requirement)

##### Humanities/Social Science/Diversity Requirements

PSYC& 100 (was PSYC 111) and ten more credits with no more than ten credits from any one discipline 15

##### General Chemistry Requirements

CHEM& 161 (was CHEM 151) General Chem w/Lab I 5

CHEM& 162 (was CHEM 152) General Chem w/Lab II 5

CHEM& 163 (was CHEM 153) General Chem w/Lab III 5

##### Organic Chemistry Requirements

CHEM& 261 (was CHEM 251) Organic Chem w/Lab I 5

CHEM& 262 (was CHEM 252) Organic Chem w/Lab II 5

CHEM& 263 (was CHEM 253) Organic Chem w/Lab III 5

##### Biology for Science Majors Requirements

BIOL 201 General Biological Science 5

BIOL 202 General Biological Science 5

BIOL 203 General Biological Science 5

(15 credits of PHYS is recommended but not required)

##### Electives

EDUC& 205 (was EDUC 110) Intro to Ed w/Field Experience 5

#### Total Credits

**90 minimum**



## Business

### Program of Study: Business

#### Degree: AB-DTA/MRP — Associate in Business — Direct Transfer Agreement

This degree is for students planning to prepare for various business majors at universities in Washington. You will need to ask an advisor at the 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 also 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.

#### Program Requirements

##### Communications Requirements

ENGL& 101	English Composition I	5
ENGL 102	English Composition	5

##### Quantitative/Symbolic Reasoning Skills Requirements

(MATH 099 proficiency is required)

MATH 125	Finite Mathematics	5
MATH& 148	(was MATH 140) Business Calculus	5

##### Humanities/Diversity Requirements

No more than 10 credits per discipline area.  
No more than 5 credits in world languages.  
No more than 5 credits of performance/skills classes are allowed.

##### Social Science Requirements

ECON& 201	(was ECON 205) Micro Economics	5
ECON& 202	(was ECON 206) Macro Economics	5
5 additional credits		5

##### Natural Science Requirements

BUS 206	(was BSAD 206) Statistical Methods	5
10 additional credits	in two different disciplines is required in physical, biological, and/or earth sciences, including at least one lab course.	10

##### Business Requirements

ACCT& 201	(was ACCT 231) Prin of Accounting I	5
ACCT& 202	(was ACCT 232) Prin of Accounting II	5
ACCT& 203	(was ACCT 233) Prin of Accounting III	5
BUS& 201*	(was BSAD 251) Business Law	5

##### Electives

See a business advisor for a list of approved electives. 5

\*\*See note.

**Total Credits 90**

\*Business Law and Introduction to Law are two distinct subject areas with minimal (approximately 20 percent) content overlap. Please note:

UW (all campuses) requires a course equivalent to: Intro to Law (MBMT 200)

EWU, CWU, WSU (all campuses), SMU, SPU require a course equivalent to: Business Law

Heritage, PLU, SU, and Walla Walla College 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.

\*\*Four institutions have requirements for admission to the major that go beyond those specified above that students can meet by careful selection of the elective course:

UW (all campuses) requires a course equivalent to Management Information Systems (MIS 250)

Gonzaga requires a course equivalent to Management Information Systems (BMIS 235)

PLU requires a course equivalent to Computer Applications (CSCE 120), or equivalent course or skills test

SPU requires a course equivalent to Spreadsheet (BUS 1700), or equivalent course or skills test

### Program of Study: General Business

#### Certificate: COP — Certificate of Proficiency

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

#### General Education Requirements

##### Communications Requirement

ENGL& 101	English Composition I	<i>or</i>
BUS 119	(was BSAD 190) Business Communication	<i>or</i>
ENGL 110	Industrial Communication	5

##### Computation Requirement\*

BUS 104	(was BSAD 104) Business Mathematics	5
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##### Human Relations/Social Sciences Requirement

BUS 144	(BSAD 126) Mgmt of Human Relations	5
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#### Program Requirements

ACCT 101	Introduction to Accounting Concepts	5
BUS& 101	(was BSAD 110) Introduction to Business	5
BUS 150	(was BSAD 164) Customer Service/Mgmt.	5
BUS 165	(was BSAD 115) Salesmanship	5
CS 108	(was CIS 108) Internet Fundamentals	1
CS 109	(was CIS 109) Fundamentals of PowerPoint	1



CS 110	(was CIS 110) Intro to Microcomputer Applications	3
CS 121	(was CIS 120) Introduction to Spreadsheets	5
<b>Total Credits</b>		<b>45</b>

\*MATH 92, Elementary Algebra, or higher-level math courses may be substituted for BUS 104 (was BSAD 104).

### **Program of Study: Business Management**

If you want a 4-year degree in Business Management from The Evergreen State College, LCC's Business Management transfer degree will cover your first two years.

You will get classroom instruction in the management field and develop job entry skills, prepare yourself to open and manage your own small business, or find advancement opportunities for management or supervisory positions through the Business Management Program.

### **Degree: AAS — Associate in Applied Science**

#### **General Education Requirements**

##### **Communications Requirement**

ENGL& 101 English Composition I *or*

BUS 119 (was BSAD 190) Business Communications 5

##### **Computation Requirement**

BUS 104 (was BSAD 104\*) Business Math Applications 5

##### **Human Relations/Social Sciences /Diversity Requirement\***

BUS 144 (was BSAD 126) Management of Human Relations 5

##### **Natural Sciences/Humanities Requirement**

From distribution list 5

##### **Health Requirement**

HLTH 106 Health Today *or*

HLTH 100 Occupational Safety and Health 2-3

#### **Program Requirements**

ACCT 101 Introduction to Accounting Concepts *or*

ACCT& 201 (was ACCT 231) Principles of Accounting I 5

BUS& 101 (was BSAD 110) Introduction to Business 5

BUS 259 (was BSAD 111) Starting/Managing a Small Business 5

BUS 165 (was BSAD 115) Salesmanship 5

BUS 150 (was BSAD 164) Customer Service/Management 5

BUS 240 (was BSAD 240) Principles of Supervision 5

BUS 244 (was BSAD 260) Human Resource Mgmt. 5

BUS& 201 (was BSAD 251) Business Law 5

BUS 264 (was BSAD 263) Principles of Marketing 5

BUS 245 (was BSAD 275) Principles of Management 5

BUS 294 Career Success 2

CS 121 (was CIS 120) Introduction to Spreadsheets 5

ECON 105 Intro to Economics *or*

ECON& 201 (was ECON 205) Micro Economics 5

Technical Electives 5-6

#### **Total Credits**

**90**

\*MATH 92, Elementary Algebra, or higher-level math courses may be substituted for BUS 104 (was BSAD 104).

### **Degree: AAS-T — Associate in Applied Science — Transfer**

#### **General Education Requirements**

##### **Communications Requirement**

ENGL& 101 English Composition I 5

ENGL 102 English Composition 5

##### **Computation Requirement**

MATH 112 College Algebra 5

##### **Human Relations/Diversity Requirement**

BUS 144 (was BSAD 126) Mgmt of Human Relations 5

##### **Social Sciences**

BUS& 201 (was BSAD 251) Business Law 5

ECON 105 Intro to Economics *or*

ECON& 201 (was ECON 205) Micro Economics 5

##### **Natural Sciences**

From distribution list 5

##### **Humanities Requirement**

From distribution list 5

##### **Health Requirement**

HLTH 100 Occupational Safety and Health 3

#### **Program Requirements**

ACCT& 201 (was ACCT 231) Principles of Accounting I 5

BUS& 101 (was BSAD 110) Introduction to Business 5

BUS 259 (was BSAD 111) Starting/Managing a Small Business 5

BUS 165 (was BSAD 115) Salesmanship 5

BUS 150 (was BSAD 164) Customer Service/Management 5

BUS 240 (was BSAD 240) Principles of Supervision 5

BUS 264 (was BSAD 263) Principles of Marketing 5

BUS 245 (was BSAD 275) Principles of Management 5

CS 121 (was CIS 120) Introduction to Spreadsheets 5

Technical Electives 2

#### **Total Credits**

**90**



## Program of Study: Retail Management

### **Certificate: COP — Certificate of Proficiency**

The Retail Management Certificate of Proficiency prepares current and future retail employees for success in the fast-paced retail industry. This program will help you understand the scope and requirements of a management position in a retail business, including grocery stores, department stores, specialty retailers, and e-tailers. This program was developed with, and is endorsed by, the Western Association of Food Chains (WAFC). Students completing the Retail Management COP may earn an AAS degree in Business Management by completing additional course work at LCC.

### *General Education Requirements*

#### *Communications Requirement*

ENGL& 101 English Composition I *or*  
 BUS 119 (was BSAD 190) Business Communications 5

#### *Computational Requirement*

BUS 104 (was BSAD 104) Business Math (or higher) 5

#### *Computational Requirement*

BUS 144 (was BSAD 126) Mgmt of Human Relations 5

### *Program Requirements*

ACCT 101 Intro to Accounting Concepts 5  
 BUS 159 (was BSAD 160) Principles of Retailing 5  
 BUS 245 (was BSAD 275) Principles of Management 5  
 BUS 244 (was BSAD 260) Human Resource Management 5  
 BUS 264 (was BSAD 263) Principles of Marketing 5  
 CS 110 (was CIS 110) Intro Microcomputer Applications 3  
 SPCH 110 Intro to Public Speaking 5

**Total Credits 48**

### **Certificate: COC — Certificate of Completion**

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

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

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

### **Content Areas**

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

**Total Minimum Credits**

**36**

## **Business Technology**

The Business Technology program prepares students for careers as administrative support professionals in a variety of business and medical offices. Administrative support professionals are responsible for performing and coordinating administrative activities, managing the constant flow of information, providing excellent customer service, and operating and maintaining office equipment.

### **Programs of Study: Administrative Assistant and Medical Administrative Support**

### **Degree: AAS — Associate in Applied Science**

#### *General Education Requirements*

#### *Communications Requirement*

ENGL& 101 English Composition I 5

#### *Computation Requirement*

BUS 104 (was BSAD 104) Business Math Applications 5

#### *Human Relations/Social Sciences/Diversity Requirement*

BUS 144 (was BSAD 126) Management of Human Relations *or*

BUS 150 (was BSAD 164) Customer Service 5

#### *Natural Sciences/Humanities Requirement*

From distribution list 5

#### *Health Requirement*

HLTH 100 Occupational Safety and Health 3

### *Program Core*

ACCT 101 Introduction to Accounting Concepts 5

BUS 119 (was BSAD 190) Business Communications 5

BTEC 104 Introduction to Business Technology 5

BTEC 106 Proofreading Skills 2

BTEC 111 Intermediate Word Processing 5

BTEC 112 Advanced Word Processing 5

BTEC 211 Machine Transcription 3

CS 130 (was CIS 130) Introductory Database Applications 5

**Total Credits**

**58**



In addition to the General Education and Program Core requirements, complete one of the two options listed below to earn an AAS degree:

### Administrative Assistant

BUS& 101	(was BSAD 110) Intro to Business	5
BTEC 113	Applied Word Processing & Desktop Publishing	5
BTEC 125	Filing	3
BTEC 130	Electronic Calculators	2
BTEC 260	Office Procedures	5
CS 111	(was CIS 150) Intro to Micro Operating Systems	4
CS 121	(was CIS 120) Intro to Spreadsheets	5
Elective	ACCT, BUS (was BSAD), BTEC or CS (was CIS) elective	<u>3</u>
<b>Total Credits</b>		<b>32</b>
<b>Total Minimum AAS Degree Credits</b>		<b>90</b>

### Medical Administrative Support

BTEC 125	Filing	2
BTEC 130	Electronic Calculators	1
BTEC 171	Medical Reception Procedures	3
BTEC 172	Medical Office Procedures	3
BTEC 173	Computers in the Medical Office	3
BTEC 181	Medical Terminology I	3
BTEC 182	Medical Terminology II	3
BTEC 185	Medical Machine Transcription	
BTEC 186	Advanced Medical Machine Transcription	3
CS 121	(was CIS 120) Intro to Spreadsheets	5
Elective	Social Sciences Elective	<u>5</u>
<b>Total Credits</b>		<b>34</b>
<b>Total Minimum AAS Degree Credits</b>		<b>92</b>

### **Certificate: COP — Certificate of Proficiency**

Five Certificates of Proficiency are available in Business Technology. Complete courses for the option you choose. The first four options share the same General Education Requirements:

#### *General Education Requirements*

##### *Communications Requirement*

BUS 119 (was BSAD 190) Business Communications 5

##### *Computation Requirement*

MATH 091 Pre-Algebra *or*  
BUS 104 (was BSAD 104) Business Math Applications 5

#### *Human Relations/Social Sciences Requirement*

BUS 144 (was BSAD 126) Management of Human Relations *or*  
BUS 150 (was BSAD 164) Customer Service/Management 5  
**Total Credits 15**

### Administrative Support

General Education Requirements	15
BTEC 101 Basic Word Processing/Formatting	5
BTEC 104 Introduction to Business Technology	5
BTEC 106 Proofreading	2
BTEC 111 Intermediate Word Processing	5
BTEC 112 Advanced Word Processing	5
BTEC 125 Filing	1
BTEC 130 Electronic Calculators	1
BTEC 211 Machine Transcription	2
BTEC 260 Office Procedures	<u>5</u>
<b>Total Credits</b>	<b>46</b>

### Legal Transcription

General Education Requirements	15
BTEC 101 Basic Word Processing/Formatting	5
BTEC 104 Introduction to Business Technology	5
BTEC 106 Proofreading	2
BTEC 111 Intermediate Word Processing	5
BTEC 112 Advanced Word Processing	5
BTEC 211 Machine Transcription	2
BTEC 231 Legal Terminology/Transcription	3
BTEC 232 Legal Transcription	<u>3</u>
<b>Total Credits</b>	<b>45</b>

### Medical Reception

General Education Requirements	15
BTEC 101 Basic Word Processing/Formatting	5
BTEC 104 Introduction to Business Technology	5
BTEC 106 Proofreading	2
BTEC 111 Intermediate Word Processing	5
BTEC 125 Filing	3
BTEC 130 Electronic Calculators	1
BTEC 171 Medical Reception Procedures	3
BTEC 181 Medical Terminology I	3
BTEC 182 Medical Terminology II	<u>3</u>
<b>Total Credits</b>	<b>45</b>



## Medical Transcription

General Education Requirements	15
BTEC 106 Proofreading	2
BTEC 111 Intermediate Word Processing	5
BTEC 112 Advanced Word Processing	5
BTEC 125 Filing	3
BTEC 171 Medical Reception Procedures	3
BTEC 181 Medical Terminology I	3
BTEC 182 Medical Terminology II	3
BTEC 185 Medical Machine Transcription	3
BTEC 186 Adv Medical Machine Transcription	3
<b>Total Credits</b>	<b>45</b>

## Medical Billing and Coding Specialist

### *General Education Requirements*

#### *Communication requirement*

BUS 119 (was BSAD 190) Business Communications <i>or</i>	
ENGL& 101 (was ENGL 101) English Composition	5

#### *Computation Requirement*

BUS 104 (was BSAD 104) Business Math Applications <i>or</i>	
MATH 105 Mathematics for Health Sciences	5

#### *Human Relations/Social Sciences*

BUS 144 (was BSAD 126) Management of Human Relations <i>or</i>	
BUS 150 (was BSAD 164) Customer Service/Management	5

### *Program Requirements*

BTEC 104 Introduction to Business Tech <i>or</i>	
CS 110 (was CIS 110) Intro to Microcomputer Applications	5 or 3
BTEC 130 Electronic Calculators	1
BTEC 161 Intro to ICD-9 Coding in the Medical Office (Part I)	4
BTEC 162 Intro to ICD-9 Coding in the Medical Office (Part II)	4
BTEC 164 Legal Aspects of the Medical Office	2
BTEC 169 Intro. To Basic CPT Coding	3
BTEC 171 Medical Reception Procedures	3
BTEC 172 Medical Office Procedures	3
BTEC 173 Computers in the Medical Office	3
BTEC 181 Medical Terminology I <i>or</i>	
MEDA 101 Medical Vocabulary I	3
BTEC 182 Medical Terminology II <i>or</i>	
MEDA 102 Medical Vocabulary II	3
BIOL& 170 (was BIOL 120) Human Biology <i>or</i>	
MEDA 120 Survey of Human A & P	5
<b>Total Credits</b>	<b>52-54</b>

## Chemical Dependency Studies

Get a working knowledge of theory and practice as a health care provider to clients who are experiencing chemical abuse/dependence. Washington State mandates additional certification requirements. Placement testing is required before entering the program; additional courses may be required.

Take CDS courses in the recommended quarter sequence, as they are only offered once a year. See the CDS advisor for additional information and course sequences.

### **Degree: AAS — Associate in Applied Science**

#### *General Education Requirements*

##### *Communications Requirement*

ENGL 100 English Fundamentals or higher	5
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##### *Computation Requirement*

MATH 092 Elementary Algebra or higher	5
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##### *Human Relations/Social Sciences Requirement*

PSYC& 100 (was PSYC 111) Intro to General Psychology	5
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##### *Natural Sciences Requirement*

BIOL& 100, 170 (was BIOL 120), BIOL 221, 222, CHEM& 100, or CHEM& 121 (was CHEM 111)	5
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##### *Diversity Requirement*

SOC& 101 (was SOCY 110) Intro to Sociology <i>or</i>	
SPCH 109 Intercultural Communication	5

##### *Health Requirement*

HLTH 100	3
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### *Program Requirements*

CDS 101* Intro to Chemical Dependency Counseling	3
CDS 102* Intro to Theories/Counseling of Chemically Dependent Clients	3
CDS 107 Adolescent Developmental Issues and Chemical Dependency	3
CDS 110* Alcohol/Drug Pathophysiology and Pharmacology	3
CDS 111* Record Keeping and Case Management	3
CDS 113 Treatment Principles of Chemical Dependency	3
CDS 121* Ethical Issues in Chemical Dependency Counseling	3
CDS 201 Dynamics of the Family and Chemical Dependency Counseling	3
CDS 202 Chemical Dependency Counseling with Diverse Populations	3
CDS 203 Relapse Prevention and Intervention	3
CDS 215* Group Counseling: Theories/Application	4
CDS 220 Co-occurring Disorders: Mental Health Disorders in CDS	3



CDS 288	Cooperative Work Experience/ Field Placement I (5 credits/quarter)	10
CDS 289	Cooperative Work Experience Seminars/ Field Placement II (1 credit/quarter)	2
PSYC& 200	(was PSYC 205) Lifespan Psychology	5
Electives*		8

**Total Credits 90**

\*You must complete these courses, along with math, English, psychology, and natural science requirements to be eligible for your fieldwork credits.

You will need at least 8 elective credits, in addition to the General Education and Program Requirements, for the minimum of 90 credits to earn the Associate in Applied Science Degree. Contact the CDS program advisor for any changes in State of Washington requirements.

**Recommended Electives:**

CDS 105	Chemical Dependency/Domestic Violence	3
CDS 106	Prevention/Intervention Specialist	3
CDS 108	Running School-Based Support Groups	3
PSYC 209	Interviewing Techniques	5

## Chemistry

### Program of Study: Undergraduate Studies for Future Secondary Chemistry Teachers

#### Degree: ACE-AS-T/MRP — Associate in Chemistry Education — Transfer degree (Opt. 1)

Note: For this degree, specific grade requirements vary from course to course and among transfer institutions. Check with the transfer advisors. Some baccalaureate institutions require physics with calculus. It is up to you to check their specific major requirements the year before you transfer.

#### Program Requirements

##### Communications Requirements

ENGL& 101	English Composition I	5
ENGL 102	English Composition	5

##### Mathematics Requirements

MATH& 151	Calculus I <b>and</b>	5
MATH& 152	Calculus II <b>and</b>	5
MATH& 153	Calculus III <b>or</b>	
MATH 210	Elements of Statistics	5

##### Humanities/Social Science/Diversity Requirements

PSYC& 100	(was PSYC 111) and ten more credits with no more than ten credits from any one discipline	15
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#### Pre-Major Requirements

CHEM& 161	(was CHEM 151) General Chem w/Lab I	5
CHEM& 162	(was CHEM 152) General Chem w/Lab II	5
CHEM& 163	(was CHEM 153) General Chem w/Lab III	5
CHEM& 261	(was CHEM 251) Organic Chem w/Lab I	5
CHEM& 262	(was CHEM 252) Organic Chem w/Lab II	5
CHEM& 263	(was CHEM 253) Organic Chem w/Lab III	5
PHYS 251	General Physics	5
PHYS 252	General Physics	5
PHYS 253	General Physics	5

#### Electives

EDUC& 205	(was EDUC 110) Intro to Ed w/Field Exp	5
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**Total Credits 90 minimum**

Also see AS-T BIO/CHEM E/MRP — Associate in Bioengineering and Chemical Engineering on page 48.

## 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 Completion option focusing just on technical drawing and computer aided drafting is a great way to upgrade job skills. The Certificate of Proficiency program includes additional studies in other aspects of design and manufacturing.

#### Certificate: COP — Certificate of Proficiency

##### General Education Requirements

##### Social Sciences/Human Relations:

BUS 144	(was BSAD 126) recommended	5
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##### Communications Requirement

(ENGL 100, 110, or ENGL& 101)	5
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##### Computation Requirement

MATH 099	Intermediate Algebra (or higher level math)	5
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##### Health Requirement

HLTH 100	Occupational Safety and Health	3
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##### 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 and Architectural Graphics	3
MFG 110	Project Management <b>or</b>	
MFG 115	Manufacturing Processes	4-5
MFG 130	Materials Science	5



MFG 140	Applied Hydraulics	4
MFG 210	Statics	4
<b>Total Credits</b>		<b>47-48</b>

## Certificate: COC — Certificate of Completion

### 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 and Architectural Graphics	3
MFG 110	Project Management <i>or</i>	
MFG 115	Manufacturing Processes <i>or</i>	
MFG 130	Materials Science	4 - 5
<b>Total Credits</b>		<b>16-17</b>

### Pre-Major Requirements

CS 170	(was CIS 180) Fundamentals of Computer Programming	5
CS 270	(was CIS 280) Introduction to Data Structures	5
CS 280	(was CIS 284) Advanced Data Structures	5
CS 275	(was CIS 285) Object Oriented Programming in Java	5
PHYS 251	General Physics	5
PHYS 252	General Physics	5
PHYS 253	General Physics	5
MATH& 153	Calculus III	5
MATH 215	Discrete Structures	5
MATH 220	Linear Algebra	5
Electives**		10
<b>Total Credits</b>		<b>90</b>

## Computer Science

You can start your bachelor's degree in Computer Science at LCC. Select the 4-year college to which you will be transferring and work closely with your LCC advisor to be sure your coursework matches the requirements of your target college. Qualify for entry-level employment as a computer support specialist, utilizing skills in networking, programming and application by successfully completing program requirements and select areas of emphasis. You can also update your current computer skills by taking individual courses in an area of interest.

### Program of Study: Computer Science

#### Degree: AS-T — Associate in Science — Transfer (Opt. 2)

If you want to transfer to a university to major in computer science consider completing this degree. Be sure to work with an advisor, as many universities have different requirements.

#### General Education Requirements

##### Communications Requirement

ENGL& 101	English Composition	5
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##### Computation Requirement

MATH& 151	Calculus I	5
MATH& 152	Calculus II	5

##### Humanities/Social Science/Diversity Requirement

See the Distribution List for Humanities and Social Science classes that meet this requirement. Minimum of 5 credits in Humanities, minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science

15

WSU transfer students must also take CS 285 (was CIS 235) Programming Tools, CS 281 (was CIS 282) Digital Design and CS 282 (was CIS 283) Microprocessors in order to transfer as a junior – 15 credits.

A "Learning Experience" 5-credit course that evaluates the student's knowledge, skills, attitudes, and values must be completed after earning 60 credits. A list of courses that will meet this requirement will be available from departmental advisor, and may also satisfy a Pre-Major requirement if included in the list above.

\*\*Electives - Consult with a departmental advisor for remaining credits to be taken to earn a total of 90 credits.

### Program of Study: Computing Specialist

#### Degree: AAS — Associate in Applied Science

To complete an AAS degree, complete general education requirements, program core requirements, and any two of the four Certificates of Completion listed on page 44. Please note: If your two Certificates of Completion total only 25 credits, you will need to take one additional course from the Certificates of Completion listed to complete your AAS degree.

#### General Education Requirements

##### Communications Requirement

ENGL& 101	English Composition	5
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##### Computation Requirement

MATH 99	Intermediate Algebra or higher (excluding MATH& 131/132 (was 121/122))	5
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##### Human Relations/Diversity/ Social Science Requirement

BUS 144	(was BSAD 126) Management of Human Relations or	
SOC& 101	(was SOCY 110) Introduction to Sociology	5



**Humanities Requirement/Natural Science Requirement**

CS 170	(was CIS 180) Fundamentals of Computer Programming	5
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**Health Requirement**

HLTH 100	Occupational Safety and Health	3
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**Program Core Requirements**

CS 100	(was CIS 100) Introduction to Information Systems	5
CS 102	(was CIS 102) Internet and Web Page Design	5
CS 114	Principles of PC Operating Systems	3
CS 121	(was CIS 120) Intro to Spreadsheets	5
CS 130	(was CIS 130) Introductory Database Applications	5
CS 211	(was CIS 211) Networking Basics	5
CS 260	(was CIS 240) Network Security <i>or</i>	
CS 264	Computer Forensics	5
CS 245	(was CIS 251) Computer Configuration and Maintenance	6
CS 288/289	Cooperative Education	2

**Total AAS credits 92-95**

**Degree: AAS-T Associate in Applied Science — Transfer**

Complete all of the same requirements listed for the AAS except for the computation requirement. Complete the following computation requirement for the AAS-T degree: MATH 112 College Algebra or higher, excluding MATH 121/122.

**Total AAS-T credits 92-95**

**Certificate: COC — Certificate of Completion**

If you are looking to upgrade your skills, you can complete a Certificate of Completion by completing courses listed in a certificate block.

**Help Desk Technician**

BTEC 145	Word Processing 1/2	5
BTEC 148	Outlook	2
BUS 150	(was BSAD 164) Customer Service	5

**Total Credits 12**

**Networking**

CS 212	Local Area Networks: Theory & Application	5
CS 213	Local Area Networks: Theory & Application	5
CS 249	(was CIS 252) Advanced Operating Systems	3

**Total Credits 13**

**Web Development**

ART 162	Basic Photoshop	3
CS 230	(was CIS 230) Database Development	5

CS 175/275	(was 185/285) Event-Driven Programming <i>or</i> Object-Oriented Programming in Java	5
<b>Total Credits</b>		<b>13</b>

**Programming**

CS 175	(was CIS 185) Event-Driven Programming	5
CS 270	(was CIS 280) Introduction to Data Structures	5
CS 275	(was CIS 285) Object-Oriented Programming in Java	5
<b>Total Credits</b>		<b>15</b>

**Certificate: COP — Certificate of Proficiency**

Complete the general education and program core requirements from the Associate in Applied Science degree to complete a certificate of proficiency.

**Total COP Credits 64**

Also see AS-T COMP E EE/MRP – Associate in Computer and Electrical Engineering on page 48 and AS-T EET/CTE/MRP – Associate in Electrical Engineering and Computer Engineering Technology

**Criminal Justice**

Modern law enforcement is a highly competitive career field. The more education you have, the greater your chance of employment and advancement. You can 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: AAS — Associate in Applied Science****General Education Requirements****Communications Requirement**

ENGL& 101	English Composition I	5
ENGL 102	English Composition	5
SPCH 110	Intro to Public Speaking	5

**Computation Requirement**

MATH 092	Elementary Algebra	5
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**Human Relations/Social Sciences Requirement\***

PSYC& 100	(was PSYC 111) General Psychology	5
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**Natural Sciences Requirement/Humanities Requirement**

	From distribution list	5
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**Diversity Requirement**

SOC& 101	(was SOCY 110) Intro to Sociology	5
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**Health Requirement**

HLTH 106	Health Today	2
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**Program Requirements**

BUS& 201	(was BSAD 251) Business Law	5
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CJ& 101*	(was ADMJ 186*) Intro to Criminal Justice	5
CJ& 110*	(was ADMJ 182*) Criminal Law	5
CJ 154*	(was ADMJ 154*) American Legal System	5
CJ 181	(was ADMJ 181) Report Writing for Law Enforcement	3
CJ 183*	(was ADMJ 183*) Administration of Justice	5
CJ 260*	(was ADMJ 260*) Physical Evidence & Criminalistics	5
CS 110	(was CIS 110) Microcomputer Applications	3
POLS& 202	(was POLS 106) American Government	5
POLS 220	Law and Social Issues	5
Electives	See Criminal Justice advisor for electives	<u>11-13</u>

**Total Credits 94-96**

Note: 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 (was ADMJ 100), Basic Law Enforcement, for the three courses. The training commission curriculum consists of 450 hours of classroom instruction.

## Diesel/Heavy Equipment Technology

The Diesel/Heavy Equipment Technology program prepares students for a wide variety of careers in any industry that utilizes trucks, excavators, bulldozers, and other heavy equipment, as well as industrial equipment utilizing diesel power and hydraulic devices. As a graduate, you could work for truck and heavy equipment dealers, railroads, and marine operations using tug and fishing boats. Graduates may also work in industrial maintenance, auto, and RV repair.

Your LCC course work will be a mixture of basic theory and intensive hands-on application that focuses on the major mechanical systems found in a wide variety of industries and applications. LCC's Diesel/Heavy Equipment Technology program is one of the few programs that have been accepted for membership in the National Fluid Power Association.

You may enter the program any quarter and may transfer to pursue a four-year degree in Diesel Power at several four-year institutions.

### Program of Study: Diesel/Heavy Equipment Technology

**Degree: AAS — Associate in Applied Science**

#### *General Education Requirements*

##### *Communications requirement*

ENGL 110	Industrial Communication recommended	5
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##### *Computation Requirement*

MATH 092	Elementary Algebra or higher, (MATH 106 Industrial Mathematics recommended)	5
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#### *Human Relations/Social Sciences/Diversity Requirement*

BUS 144	(was BSAD 126) Management of Human Relations recommended	5
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#### *Natural Science requirement*

Tech 100	Adv Principles of Technology <i>or</i>	
MFG 130	Materials Science recommended	5
HLTH 100	Occupational Health and Safety	3

#### *Program Requirements*

(You may complete some of these requirements through an approved high school Tech Prep program.)

ADT 100*	Essentials of Mechanics	5
ADT 101	Electrical Systems I	5
ADT 102	Electrical Systems II	10
ADT 104	Vehicle Climate Control	6
ADT 111	Hydraulic Brakes	5
ADT 122	Gas Engines II	5
ADT 205	Hydraulics	5
ADT 206	H.D. Power Trains	10
ADT 207	H.D. Chassis Maintenance	10
ADT 210	Hydraulics II	5
ADT 223	Diesel Engine Rebuild	16
ADT 226	Diesel Engine Performance	15
Electives	Choose from list below	<u>2-15</u>

**Total Credits 99-112**

\*Note: Program advisor may recommend substituting COLL 100 (College Success) if you have basic mechanical experience.

#### *Electives*

Choose electives from the following courses to meet your needs:

ADT 122	Gas Engines II (additional credits)	5
ADT 228	Truck Driving for Technicians	2
ADT 299	Independent Study	1-10
MASP 107	Machining for Related Occupations	2-6
WELD 151	Introduction to Oxy-Acetylene	2-6
WELD 152	Introduction to Arc Welding	2-10
WELD 221	Wire Machine	10

### Program of Study: Heavy Equipment Preventive Maintenance

**Certificate: COP — Certificate of Proficiency**

(This certificate is a shorter route to an entry-level job.)

#### *General Education Requirements*

##### *Communications Requirement*

ENGL 110	Industrial Communications	5
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##### *Computation Requirement*

MATH 070	Review of Math Fundamentals or higher	5
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**Human Relations/Social Sciences Requirement**

BUS 144 (was BSAD 126) Management of Human Relations recommended	5
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**Program Requirements**

Any ADT courses approved by program advisor	45
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**Total Credits 60**

ECED 220 Arts & Crafts for Young Children	3
ECED 260 Practicum IV	9
EDUC& 114 (was ECED 114) Child Development	3
EDUC& 203 (was ECED 210) Exceptional Child	3
Electives	3-5

**Total Credits 92-94**

## Early Childhood Education

### Program of Study: Early Childhood Education

Preschools, licensed in-home care, childcare centers, and Head Start/Early Childhood Education and Assistance programs offer many opportunities. If you want a career working with preschool children, you can get training and experience through LCC's Early Childhood Education Program. You may be required to pay for the required criminal background check and proof of a negative tuberculin (TB) skin test.

### Degree: AAS — Associate in Applied Science

#### General Education Requirements

<b>Communications Requirement</b> (Must include ENGL& 101 English Composition I)	10
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<b>Computation Requirement</b> BUS 104 (was BSAD 104) Business Math Applications <i>or</i> MATH 092 Elementary Algebra or higher	5
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<b>Human Relations/Social Sciences</b> PSYC& 100 (was PSYC 111) Intro to General Psychology PSYC& 200 (was PSYC 205) Lifespan Psychology	5 5
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<b>Natural Sciences/Humanities Requirement</b> From distribution list	5
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<b>Diversity Requirement</b> EDUC& 205 (was EDUC 110) recommended	5
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<b>Health Requirement</b> HLTH 100 Occupational Safety and Health	3
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<b>Program Requirements</b> ECED 109 Literature and Language Development for Young Children	3
ECED 115 Health, Safety, & Nutrition for Young Children	3
ECED 119 Guidance Techniques for Young Children	3
ECED 126,127,128 Practicum I, II, III	9
ECED130 Introduction to Early Childhood Education	3
ECED 204 Music & Movement for Young Children	3
ECED 215 Early Childhood Curriculum Development	3
ECED 216 Family System	3
ECED 219 Math, Science, & Computers for Young Children	3

### Degree: AAS-T — Associate in Applied Science —Transfer degree

#### General Education Requirements

<b>Communications Requirements</b> ENGL& 101 English Composition	5
ENGL 102 English Composition	5
SPCH 110 Intro to Public Speaking	5

<b>Quantitative Skills Requirements</b> (MATH 099 proficiency required through course completion or placement assessment) MATH 121 Math for Elementary Teachers I MATH 122 Math for Elementary Teachers II	5 5
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<b>Humanities Requirements</b> DRMA& 101 (was DRAM 100) Intro to Theatre MUSC 100 Fundamentals of Music	5 5
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<b>Natural Science Requirements (must be lab course)</b> ASTR 110 Descriptive Astronomy or BIOL& 100 (was BIOL 100) Survey of Biology <i>or</i> ERSI 104 Intro to Earth Sciences	5 5
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<b>Social Science Requirement</b> PSYC& 100 (was PSYC 111) General Psychology or PSYC& 200 (was PSYC 205) Lifespan Psychology SOC& 100 (was SOCY 110) Intro to Sociology	5 5 5
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#### Program Requirements

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

<b>Child Development and Learning including Typical and Atypical</b> ECED 130 Intro to Early Childhood	3
EDUC& 114 (was ECED 114) Child Development	3
EDUC& 203 (was ECED 210) Exceptional Child	3

<b>Child Guidance</b> ECED 119 Guidance Techniques for Young Children	3
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<b>Family and Community Relationships</b> ECED 216 Family Systems SOC 209 (was SOCY 209) Sociology and the Family	3 5
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<b>Diversity, Inclusion, Multicultural</b> EDUC& 205 (was EDUC 110) Intro to Ed w/Field Exp	5
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<b>Health, Safety, and Nutrition</b> ECED 115 Health, Safety, and Nutrition for Young Children	3
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### Observation, Assessment and Evaluation

ECED 126	Practicum I	3
ECED 127	Practicum II	3

### Professionalism

ECED 209	Early Childhood Mentor Development	1
ECED 215	Curriculum Development	3

### Practicum/Field Experience (suggested min. 300 hours)

ECED 128	Practicum III	3
ECED 260	Practicum IV	9

### Curriculum Development & Implementation

ECED 109	Literature & Language	3
ECED 219	Math, Science & Computer	3
ECED 220	Arts & Crafts for Young Children	3

**Total Minimum Credits 100**

### Certificate: COC — Certificate of Completion

ECED 109	Literature and Language Development for Young Children	3
ECED 115	Health, Safety and Nutrition for Young Children	3
ECED 119	Guidance Techniques for Young Children	3
ECED 126, 127, 128	Practicum I, II, III	9
ECED 130	Introduction to Early Childhood Education	3
ECED 204	Music and Movement for Young Children	3
ECED 219	Math, Science, and Computers for Young Children	3
ECED 220	Arts and Crafts for Young Children	3
EDUC& 114	(was ECED 114) Child Development	3
EDUC& 203	(was ECED 210) Exceptional Child	3
ENGL 100	English Fundamentals <i>or</i>	
ENGL& 101	English Composition I	5
HLTH 100	Occupational Safety and Health	3

**Total Credits 44**

## Education

### Program of Study: Elementary Education

#### Degree: Elem Ed-DTA/MRP — Associate in Elementary Education — Direct Transfer Agreement

#### Program Requirements

##### Communications Requirements

ENGL& 101	English Composition I	5
ENGL 102	English Composition	5

#### Quantitative Skills Requirements

(MATH 099 proficiency required through course completion or placement assessment)		
MATH 121	Math for Elementary Teachers I	5
MATH 122	Math for Elementary Teachers II	5

#### Humanities/Diversity Requirements

SPCH 110	Intro to Public Speaking	5
10 additional credits from the following list: art, music, literature, or drama		10

#### Social Science Requirements (see note 2)

HIST& 126	(was HIST 116) World Civilization I <i>or</i>	
HIST& 127	(was HIST 117) World Civilization II <i>or</i>	
HIST& 128	(was HIST 118) World Civilization III <i>and</i>	5
HIST& 136	(was HIST 156) U.S. History I <i>or</i>	
HIST& 137	(was HIST 157) U.S. History II <i>and</i>	5
10 additional credits from the following list: economics, geography, political science, psychology (ECON& 201 or 202, PSYC& 100 or 200, POLS& 202, or POLS 107)		10

#### Natural Science Requirements

5 credits biological sciences		
5 credits geology or earth science		
5 credits physical science (chemistry or physics)		
Two of the above must be with lab		15

#### Other Requirements (see note 3)

CS 110	(was CIS 110) Intro to Microcomputer Applications	3
EDUC& 205	(was EDUC 110) Intro to Ed w/Field Experience	5
Electives		

Select electives from this recommended list of content courses to meet endorsement competencies and/or academic majors: social sciences, humanities, sciences, or mathematics. 12

**Total Minimum Credits 90**

#### Notes:

1. Only coursework in which an individual receives a grade of C (2.0) or higher or a grade of pass on a pass-fail system of grading shall be counted toward the course work required for the approved endorsement program.
2. To fulfill social science requirements, students are encouraged to take "Protest, Power, & Persuasion" combining HIST& 137 (was HIST 157) and POLS& 202 (was POLS 106) to meet state requirements during winter quarter
3. If the student can demonstrate computer literacy in software programs including word processing, PowerPoint, spreadsheets, in addition to being proficient on the Internet, he/she does not need to take CS 110 (was CIS 110).
4. WSU, CWU, and SM require PSYC& 200 - Lifespan Psychology.
5. Students must take the WEST-B test in order to apply to teacher preparation programs. Plan to test prior to the final quarter to allow sufficient time for scoring.
6. Where the degree allows for student choice in classes, it is the students responsibility to contact the potential transfer institution regarding their choices.



Other LCC teacher education programs: Biology on page 36, Chemistry on page 42, Math on page 56, Physics on page 59, and General Science on page 61.

### Program of Study: Paraeducator

#### **Certificate: COP — Certificate of Proficiency**

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.

#### *General Education Requirements*

##### *Communications Requirement*

ENGL 100 English Fundamentals *or*  
ENGL& 101 English Composition I 5

##### *Computation Requirement*

MATH 099 Intermediate Algebra *or*  
MATH 121 Math for Elementary Teachers I 5

##### *Human Relations/Social Sciences Requirement*

PSYC& 100 (was PSYC 111) General Psychology 5

#### *Program Requirements*

CS 110 (was CIS 110) Intro to Microcomputer Applications 3  
EDUC& 203 (was ECED 210) Exceptional Child 3  
EDUC& 205 (was EDUC 110) Intro to Ed w/Field Experience 5  
EDUC 119 (was EDUC 114) Curriculum & Instruction 2  
EDUC 115 Education & the Law 3  
EDUC 214 Instructional Strategies 3  
EDUC 215 Classroom Management 3  
PSYC& 200 (was PSYC 205) Lifespan Psychology 5  
Electives from the list below: 3-5

**Total Credits 45-47**

Electives: ART& 100 (was ART 110), ECED 204, ECED 220, or MUSC 100

## Engineering

LCC's engineering programs give you the opportunity to build a strong basic background for successful transfer to four-year institutions, with the option of building more immediately marketable engineering skills during your studies. With an engineering degree, you can prepare for entry into aeronautical, chemical, civil/environmental, computer, electrical, manufacturing, materials, and mechanical engineering. You could work in research, development, design, operations management, teaching, sales, and consulting.

### Program of Study: Undergraduate Studies in Bioengineering and Chemical Pre-Engineering

#### **Degree: AS-T Bio/Chem E/MRP (Opt. 2)**

##### *Program Requirements*

##### *Communications Requirements*

ENGL& 101 English Composition I 5

##### *Mathematics Requirements*

MATH& 151 Calculus I 5  
MATH& 152 Calculus II 5  
MATH& 153 Calculus III 5  
MATH 241 Differential Equations 5

##### *Humanities/Social Science/Diversity Requirements*

Minimum 5 credits in Humanities,  
minimum 5 credits in Social Sciences.  
5 additional credits in either Humanities *or*  
Social Sciences from the distribution list 15  
(Economics course recommended)

##### *Pre-Major Requirements*

CHEM& 161 (was CHEM 151) General Chem w/Lab I *and* 5  
CHEM& 162 (was CHEM 152) General Chem w/Lab II *and* 5  
CHEM& 163 (was CHEM 153) General Chem w/Lab III *and* 5  
CHEM& 261 (was CHEM 251) Organic Chem w/Lab I *or*  
CHEM& 262 (was CHEM 252) Organic Chem w/Lab II 5  
CS 270 (was CIS 280) Intro to Data Structures 5  
PHYS 251 General Physics *and* 5  
PHYS 252 General Physics *and* 5  
PHYS 253 General Physics 5

##### *Electives*

Select two electives as appropriate for intended major and intended baccalaureate institution:

BIOL 201 General Biological Science I  
BIOL 202 General Biological Science II  
CHEM& 262 (was CHEM 252) Organic Chemistry *or*  
CHEM& 263 (was CHEM 253) Organic Chemistry



ENGL& 235 (was ENGL 220) Technical Writing	
ENGR& 204 (was ENGR 215) Electrical Engineering Science I: Circuits	
ENGR& 224 (was ENGR 260) Engineering Thermodynamics	
MATH 220 Linear Algebra	10
<b>Total Minimum Credits</b>	<b>90</b>

## Program of Study: Undergraduate Studies in Computer and Electrical Pre-Engineering

**Degree: AS-T Comp E EE/MRP (Opt. 2)**

### *Program Requirements*

#### *Communications Requirements*

ENGL& 101 English Composition I	5
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#### *Mathematics Requirements*

MATH& 151 Calculus I	5
MATH& 152 Calculus II	5
MATH& 153 Calculus III	5
MATH 220 Linear Algebra	5
MATH 240 Differential Equations	5

#### *Humanities/Social Science/Diversity Requirements*

Minimum 5 credits in Humanities, minimum 5 credits in Social Science. 5 credits additional in either Humanities <i>or</i> Social Sciences from the distribution list (Economics course is recommended)	15
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#### *Pre-Major Requirements*

CHEM& 161 (was CHEM 151) General Chem w/Lab I	5
CS 170 (was CIS 180) Fundamentals of Computer Prog	5
CS 270 (was CIS 280) Introduction to Data Structures	5
PHYS 251 General Physics	5
PHYS 252 General Physics	5
PHYS 253 General Physics	5
ENGR& 204 (was ENGR 215) Electrical Circuits	5

#### *Electives*

Select two electives as appropriate for intended major and intended baccalaureate institution:

BIOL& 170 was BIOL 120) Human Biology	
BIOL 201 General Biological Science I	
ENGR& 214 (was ENGR 122) Statics	
ENGR& 224 (was ENGR 260) Engineering Thermodynamics	
ENGL& 235 (was ENGL 220) Technical and Workplace Writing	10

**Total Minimum Credits 90**

## Program of Study: Undergraduate Studies in Electrical Engineering and Computer Engineering Technology

**Degree: AS-T EET/CTE/MRP (Opt. 2)**

### *Program Requirements*

#### *Communications Requirements*

ENGL& 101 English Composition I	5
ENGL& 235 (was ENGL 220/ENGR 220) Technical Writing	5

#### *Mathematics Requirements*

MATH& 151 Calculus I <i>and</i>	5
MATH& 152 Calculus II <i>and</i>	5
MATH& 153 Calculus III <i>or</i>	
MATH 210 Elements of Statistics	5

#### *Humanities/Social Science/Diversity Requirements*

Minimum 5 credits in Humanities, minimum 5 credits in Social Science. 5 additional credits in either Humanities or Social Sciences from the distribution list (Economics course recommended)	15
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#### *Pre-Major Requirements*

CHEM& 161 (was CHEM 151) General Chemistry w/Lab I	5
CS 170 (was CIS 180) Fundamentals of Computer Programming	5
CS 270 (was CIS 280) Introduction to Data Structures	5
CS 281 (was CIS 282) Digital Design	5
ENGR& 204 (was ENGR 215) Electrical Circuits	5
PHYS 151 Introductory Physics <i>and</i>	
PHYS 152 Introductory Physics <i>and</i>	
PHYS 153 Introductory Physics <i>or</i>	
PHYS 251 General Physics <i>and</i>	
PHYS 252 General Physics <i>and</i>	
PHYS 253 General Physics	15
(PHYS 251, 252, and 253 preferred)	

#### *Electives*

Select two electives as appropriate for intended major and intended baccalaureate institution.	10
MATH& 153 Calculus III <i>or</i>	
MATH 210 Elements of Statistics may count as electives)	

**Total Minimum Credits 90**



**Program of Study: Undergraduate Studies  
in Mechanical/Civil/Aeronautical/Industrial  
Materials Science/Pre-Engineering**

**Degree: AS-T Other Engineer/MRP (Opt. 2)**

***Program Requirements***

***Communications Requirements***

ENGL& 101 English Composition I 5

***Mathematics Requirements***

MATH& 151 Calculus I 5

MATH& 152 Calculus II 5

MATH& 153 Calculus III 5

MATH 220 Linear Algebra 5

MATH 240 Differential Equations 5

***Humanities/Social Science/Diversity Requirements***

Minimum 5 credits in Humanities

minimum 5 credits in Social Science.

5 additional credits in either Humanities *or*

Social Science from the distribution list 15

***Pre-Major Requirements***

CHEM& 161 (was CHEM 151) General Chem w/Lab I 5

CHEM& 162 (was CHEM 152) General Chem w/Lab II 5

CS 270 (was CIS 280) Introduction to Data Structures 5

ENGR& 214 (was ENGR 122) Statics 5

ENGR& 215 (was ENGR 261) Dynamics 5

ENGR& 225 (was ENGR 254) Mechanics of Materials 5

PHYS 251 General Physics 5

PHYS 252 General Physics 5

PHYS 253 General Physics 5

***Electives***

Select three electives as appropriate for intended major and intended baccalaureate institution:

ENGL& 235 (was ENGL/ENGR 220) Technical Writing

ENGR& 121 (was ENGR 111 ) Engineering Graphics

ENGR& 204 (was ENGR 215) Electrical Engineering Science I:  
Circuits

ENGR& 224 (was ENGR 260) Mechanics of Thermodynamics

ENGR& 225 (was ENGR 254) Mechanics of Materials 15

**Total Minimum Credits 105**

**Program of Study: Undergraduate Studies in  
Mechanical Engineering**

**Degree: AS-T MET/MRP (Opt. 2)**

***Program Requirements***

***Communications Requirements***

ENGL& 101 English Composition I 5

ENGL& 235 (was ENGL/ENGR 220) Technical Writing 5

***Mathematics Requirements***

MATH& 151 Calculus I 5

MATH& 152 Calculus II 5

MATH& 153 Calculus III *or*

MATH 210 Elements of Statistics 5

***Humanities/Social Science/Diversity Requirements***

Minimum 5 credits in Humanities,

minimum 5 credits in Social Sciences.

5 additional credits in either Humanities or Social Science  
from the distribution list 15

***Pre-Major Requirements***

CHEM& 161 (was CHEM 151) General Chem w/Lab I 5

ENGR& 121 (was ENGR 111) Engineering Graphics I 3

ENGR& 122 (was ENGR 112) Engineering Graphics II 3

PHYS 101 Introductory Physics *and*

PHYS 102 Introductory Physics *and*

PHYS 103 Introductory Physics *or*

PHYS 251 General Physics *and*

PHYS 252 General Physics *and*

PHYS 253 General Physics 15

(PHYS 251, 252, and 253 preferred)

***Electives***

Select five electives as appropriate for intended major and intended baccalaureate institution:

ECON& 201 (was ECON 205) Micro Economics *or*

ECON& 202 (was ECON 206) Macro Economics

ENGR& 214 (was ENGR 122) Statics

ENGR& 215 (was ENGR 261) Dynamics

ENGR& 225 (was ENGR 254) Mechanics of Materials

MATH& 153 (was MATH 153) Calculus III *or*

MATH 210 Elements of Statistics

SPCH 110 Introduction to Public Speaking 25

**Total Minimum Credits 91**

Note: This degree is only applicable for students planning to attend Central Washington University, Eastern Washington University or Western Washington University.



## Fire Science Technology

Prepare for occupations and advancement in modern fire service with LCC's Fire Science Technology program, which 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: Associate in Applied Science

#### General Education Requirements:

##### Communications Requirement

ENGL& 101 English Composition I *or*  
ENGL 110 Industrial Communications 5

##### Computation Requirement

MATH 099 Intermediate Algebra or higher *or*  
MATH 106 Industrial Mathematics 5

##### Human Relations/Social Sciences Requirement/Diversity

BUS 144 (was BSAD 126) Mgmt of Human Relations 5

##### Natural Sciences Requirement

CHEM& 100 Preparatory Chemistry or  
PHYS& 100 Physics for Non-Sci Majors 5

##### Health Requirement

HLTH 100 Occupational Safety and Health 3

#### 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 125 Emergency Service Rescue 5  
FISC 129 Emergency Incident Management 3  
FISC 205 Fire Investigation / Cause Determination 3  
FISC 206 Hazardous Materials Operations 3  
FISC 207 Fire Apparatus & Pumping Equipment 3  
FISC 210 Building Construction for Fire Protection 3  
FISC 215 Fixed Systems and Extinguishers 3  
FISC 220 Wildland Fire Fighter 2 (S-130-S190) 4  
FISC 224 Fire Service Instructor 3  
FISC 255 Fire Fighting Tactics and Strategy 3  
FISC 288 Cooperative Education 4  
FISC 289 Cooperative Education Seminar 1  
Electives\* 7

**Total Credits 90**

\*Elective credits may be waived for EMT training.

## Program of Study: Fire Prevention Specialist

### Certificate: COP — Certificate of Proficiency

Prepare for employment in public and private fire organizations with this program.

#### General Education Requirements

##### Communications Requirement

ENGL& 101 English Composition I 5  
SPCH 110 Introduction to Public Speaking 5

##### Computation Requirement

MATH 099 or higher *or*  
MATH 106 Industrial Math 5

##### Human Relations/Social Sciences Requirement\*

BUS 144 (was BSAD 126) Mgmt of Human Relations 5

#### Program Requirements

FISC 101 Introduction to Fire Prevention 3  
FISC 105 Fundamentals of Fire Prevention 3  
FISC 110 Fire Science I 3  
FISC 205 Fire Cause Determination 3  
FISC 206 Hazardous Materials Operations 3  
FISC 210 Building Construction for the Fire Service 3  
FISC 215 Fixed Systems and Extinguishers 3  
FISC 288/289 Cooperative Education 9

**Total Credits 50**

### Certificate: COC — Certificate of Completion

#### Fire Inspector

FISC 105 Fundamentals of Fire Prevention 3  
FISC 110 Fire Science I 3  
FISC 206 Hazardous Materials Operations 3  
FISC 210 Building Construction for the Fire Service 3  
FISC 215 Fixed Systems and Extinguishers 3  
FISC 288/289 Cooperative Education (Internship) 3

**Total Credits 18**

#### Fire Investigator

FISC 110 Fire Science I 3  
FISC 205 Fire Cause Determination 3  
FISC 206 Hazardous Materials Operations 3  
FISC 210 Building Construction for the Fire Service 3  
FISC 288/289 Cooperative Education (Internship) 3

**Total Credits 15**



**Public Education Specialist**

FISC 101	Introduction to Fire Protection	3
FISC 105	Fundamentals of Fire Prevention	3
FISC 110	Fire Science I	3
FISC 288/289	Cooperative Education (Internship)	3
SPCH 110	Intro to Public Speaking	5
<b>Total Credits</b>		<b>17</b>

**Health Occupations**

The Health Occupations program provides training for entry-level healthcare employees, with certificates for those who are already working or not yet working in healthcare.

The National Healthcare Foundation Skills Standards for the Core Curriculum will be met. Once you have satisfactorily completed both levels of the program with experience and produced a portfolio per requirements, you may take the National Health Science Assessment and be certified by national Consortium on Health Science and Technology Education and the National Occupational Competency Testing Institute.

**Certificate: COC — Certificate of Completion:**

- Health Occupations Core for the Employed Healthcare Worker – Total Credits 6
- Health Occupations Core for the Unemployed Healthcare Worker – Total Credits 12

**Program Requirements:****Employed Healthcare Worker**

AH 101	Healthcare Foundations I	1
AH 102	Healthcare Foundations II	1
AH 112	Body Structure, Function and Terminology I	1
AH 131	Therapeutic Communications I	1
AH 132	Therapeutic Communications II	1
BTEC 181	Medical Terminology I	1
<b>Total Credits</b>		<b>6*</b>

\*Students who are not currently certified in BLS, First Aid and HIV must also take AH 100 and HLTH 100.

**Program Requirements:****Unemployed Healthcare Worker**

AH 100	Bloodborne Pathogens & Infection Control	1
AH 101	Healthcare Foundations I	1
AH 102	Healthcare Foundations II	1
AH 112*	Body Structure, Function and Terminology I	1
AH 131	Therapeutic Communications I	1
AH 132	Therapeutic Communications II	1
BTEC 181	Medical Terminology I	1

HLTH 100	Occupational Safety and Health	3
COOP 288/289		2
<b>Total Credits</b>		<b>12</b>

\*BIOL& 170 (was BIOL 120), BIOL 221, or BIOL 222 with a grade of C or better may be substituted for AH 112.

**Individualized Certificate Program**

The Individualized Certificate Program (ICP) offers you an opportunity to pursue a custom-designed worksite-based learning program that is not available through current apprenticeship or college programs. Work closely with the ICP advisor, (360) 442-2332, to ensure courses meet program requirements.

**Certificates:**

**COC — Certificate of Completion — up to 44 credits**

**COP — Certificate of Proficiency — 45 or more credits**

**Program Requirements****Math Requirement**

MATH 091	Elementary Algebra or higher, as recommended	5
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**Human Relations Requirement**

See advisor for courses		5
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**Communications Requirement**

BUS 119	(was BSAD 190) Business Communication <i>or</i>	
ENGL 100	English Fundamentals <i>or</i>	
ENGL& 101	English Composition I <i>or</i>	
ENGL 110	Industrial Communications	5
HLTH 100	Occupational Safety and Health	3
ICP 288*	ICP Cooperative Work Experience	3 – 17
ICP 289	ICP Seminar	3
Electives:	See ICP advisor for approved electives	<u>Varies</u>

**Total Credits Vary by Program**

\*Work experience varies to match the program requirements, and will range from 3 to 17 credits, only 15 of which are transferable.

**Industrial Maintenance Technology**

The Industrial Maintenance Technology programs serve people with previous work experience or background in manufacturing industries. You will enhance your on-the-job experience with technical and theoretical background. Although some hands-on training is provided, you should contact the program advisor if you have little or no previous experience.

**Degree: AAS — Associate in Applied Science****General Education Requirements****Communications Requirement**

ENGL 100	English Fundamentals or higher	5
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### Computation Requirement

MATH 092 Elementary Algebra or higher 5

### Human Relations/Social Sciences/Diversity Requirement

BUS 144 (was BSAD 126) Mgmt of Human Relations 5

### Natural Sciences Requirement

(MFG 130 Materials Science recommended) 5

### Health Requirement

HLTH 100 Occupational Safety and Health 3

### Program Requirements

Complete the General Education requirements, IMT 100 – Maintenance Fundamentals, and both the electrical and mechanical core lists.

IMT 100 Maintenance Fundamentals 3

### Electrical & Instrumentation Core Requirements

IMT 130 Electrical Safety 1

IMT 131 Electrical Fundamentals – DC Circuits 5

IMT 132 Electrical Fundamentals – AC Circuits 5

IMT 134 Electrical/Electronic Test Instruments 2

IMT 135 Electrical Print Reading 1

IMT 136 Conduit Bending and Installation 1

IMT 139 National Electric Code 3

IMT 140 Fundamentals of Industrial Measurement 2

IMT 144 Industrial Process Control 1

IMT 231 Electrical Control Equipment 3

IMT 232 Electric Motors 2

IMT 233 Electrical Switchgear 2

IMT 234 Digital Electronic Theory 2

IMT 239 Programmable Controllers 2

IMT 244 Instrument Calibration 3

IMT 245 Digital Instrumentation 1

IMT 249 Troubleshooting Control Systems 3

IMT 265 Applied Elec Maintenance Techniques 3

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### Mechanical Core Requirements

BLPT 150 Machinists Blueprint Reading 5

IMT 104 Rigging, Lifting, and Rigging Gear Inspection 3

IMT 106 Industrial Lubrication 1

IMT 107 Mechanical Seals 1

IMT 108 Bearings – Reducing Failure Rate 1

IMT 110 Rotating Equipment Predictive Maintenance & Alignment 4

IMT 200 Centrifugal Pump Repair 1

IMT 204 Air Compressor Repair 1

IMT 205 Valve Repair 1

IMT 209 Pipefitting 2

IMT 264 Applied Mechanical Maintenance Techniques 3

MASP 107 Machining for Related Occupations *or* 6

MASP 111 Machine Shop I 6

MFG 140 Applied Hydraulics 4

WELD Any WELD courses 6

**Total Credits 39**

**Total AAS Degree Credits 107**

### Certificate: COP – Certificate of Proficiency

Complete the General Education Requirements listed above, and IMT 100, plus the electrical, mechanical, or power utility core list for the three COP's listed.

- Electrical Maintenance – Total credits 68
- Mechanical Maintenance – Total credits 65
- Power Utility – Total credits 71

### Power Utility Core

IMT 104 Rigging, Lifting, and Rigging Gear Inspection 5

IMT 106 Industrial Lubrications 1

IMT 130 Electrical Safety 1

IMT 131 Electrical Fundamentals – DC Circuits 5

IMT 132 Electrical Fundamentals – AC Circuits 5

IMT 134 Electrical/Electronic Test Instruments 2

IMT 135 Electrical Print Reading 1

IMT 136 Conduit Bending and Installation 1

IMT 140 Fundamentals of Industrial Maintenance 2

IMT 231 Electrical Control Equipment 3

IMT 239 Programmable Controllers 2

IMT 249 Troubleshooting Control Systems 3

IMT 288/289 Cooperative Education 10

MFG 140 Applied Hydraulics 4

**Total Credits 45**

### Certificate: COC — Certificate of Completion

Complete Health 100 and the mechanical core courses listed.

- Mechanical Maintenance – Total credits 42

## Instrumentation & Control Technology

Prepare for entry-level employment or, if you are already working in Instrumentation Technology, take all or part of the program to upgrade your technical knowledge and skill. If you already have training and experience in the electrical or electronics field, you may meet some program requirements through course waivers or substitutions. For more information, contact the program advisor.



**Degree: AAS — Associate in Applied Science****General Education Requirements****Communications Requirement**

ENGL 110 Industrial Communications recommended 5

**Computation Requirement**

MATH 099 Intermediate Algebra or higher 5

**Natural Sciences Requirement**

TECH 100 Adv Prin of Tech recommended 5

**Human Relations/Social Sciences/Diversity Requirement**

BUS 144 (was BSAD 126) Mgmt of Human Relations recommended 5

**Health Requirement**

HLTH 100 Occupational Safety and Health 3

**Program Requirements**BLPT 120 Basic Blueprint Reading *or* 5

DRFT 107 Technical Graphics 3

CS 111 (was CIS 150) Intro to Windows 4

CS 170 (was CIS 180) Programming Fundamentals 5

IMT 130 Electrical Safety 1

IMT 131 Electrical Fundamentals – DC Circuits 5

IMT 132 Electrical Fundamentals – AC Circuits 5

IMT 133 Intro to Solid State Electronics 6

IMT 135 Electrical Print Reading 1

IMT 205 Valve Repair 1

IMT 236 Applied Digital Electronics 5

INTC 101 Process Control I 6

INTC 102 Process Control II 6

INTC 201 Electronic Measuring Principles 6

INTC 202 Electronic Convert &amp; Analytical Instr 6

INTC 225 Programmable Logic Controllers, Sensors and Communications 6

MFG 140 Applied Hydraulics 4

**Total Credits 93****Certificate: COP — Certificate of Proficiency**

Prepare for an entry-level job or, if you are already working, take all or part of the Instrumentation Technology program to upgrade your technical skills and knowledge.

**General Education Requirements****Communications Requirement**

ENGL 110 Industrial Communications recommended 5

**Computation Requirement**

MATH 099 Intermediate Algebra or higher 5

**Human Relations/Social Sciences Requirement**

BUS 144 (was BSAD 126) Mgmt of Human Relations recommended 5

HLTH 100 Occupational Safety and Health 3

**Program Requirements**BLPT 120 Basic Blueprint Reading *or* 3

DRFT 107 Technical Graphics 3

IMT 130 Electrical Safety 1

IMT 131 Electrical Fundamentals – DC Circuits 5

IMT 132 Electrical Fundamentals – AC Circuits 5

IMT 133 Intro to Solid State Electronics 6

IMT 135 Electrical Print Reading 1

IMT 205 Valve Repair 1

IMT 236 Applied Digital Electronics 5

INTC 101 Process Control I 6

INTC 102 Process Control II 6

INTC 225 Programmable Logic Controllers, Sensors and Communications 6

MFG 140 Applied Hydraulics 4

**Total Credits 67****Machine Trades**

Prepare for a job as a machinist, millwright, 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: AAS — Associate in Applied Science****General Education Requirements****Communications Requirement**

ENGL 110 Industrial Communication recommended 5

**Computation Requirement**

MATH 092 Elementary Algebra or higher (MATH 106 Industrial Mathematics recommended) 5

**Human Relations/Social Sciences/Diversity Requirement\***

BUS 144 (was BSAD 126) Mgmt of Human Resources recommended 5

**Natural Sciences Requirement**

MFG 130 Materials Science recommended 5

HLTH 100 Occupational Safety and Health 3

**Program Requirements**

BLPT 150 Machinists Blueprint Reading 5

MASP 111 Machine Shop I *and/or* 10

MASP 107 Machining for Related Occupations 10

MASP 112 Machine Shop II 10



MASP 113	Machine Shop III	10
MASP 114	Machine Shop IV	10
MASP 204	CNC Machining Center Fundamentals	3
MASP 205	CNC Turning Center Fundamentals	3
MASP 221	Basic CNC Machine Shop	10
MASP 222	Advanced CNC Machine Shop	10
MFG 115	Manufacturing Processes	4
MFG 230	Computer Integrated Manufacturing	4
<b>Total Credits</b>		<b>102</b>

### Certificate: COP — Certificate of Proficiency

- Computer Numerical Control (CNC) – 68 credits
- Machinist – 73 credits

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.

#### General Education Requirements

##### Communications Requirement

ENGL 110	Industrial Communications recommended	5
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##### Computation Requirement

MATH 092	Elementary Algebra or higher (MATH 106 Industrial Mathematics recommended)	5
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##### Human Relations/Social Sciences Requirement

BUS 144	(was BSAD 126) Mgmt of Human Relations recommended	5
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##### Health Requirement

HLTH 100	Occupational Safety and Health	3
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### Computer Numerical Control (CNC)

BLPT 150	Machinists Blueprint Reading	5
MASP 107	Machining for Related Occupations <i>and/or</i>	
MASP 111	Machine Shop I	10
MASP 204	CNC Machining Center Fundamentals	3
MASP 205	CNC Turning Center Fundamentals	3
MASP 221	CNC Machine Shop I	10
MASP 222	CNC Machine Shop II	10
MFG 115	Manufacturing Processes	5
MFG 230	Computer Integrated Manufacturing	4
<b>Total Credits</b>		<b>68</b>

### Machinist

BLPT 150	Machinists Blueprint Reading	5
MASP 107	Machining for Related Occupations <i>and/or</i>	
MASP 111	Machine Shop I	10

MASP 112	Machine Shop II	10
MASP 113	Machine Shop III	10
MASP 114	Machine Shop IV	10
MFG 115	Manufacturing Processes	4
WELD 152	Introduction to Arc Welding	6
<b>Total Credits</b>		<b>73</b>

## Manufacturing

Manufacturing has evolved into a high-tech, competitive field. Manufacturing firms need people who have strong technical knowledge and hands-on skills. LCC's Manufacturing Occupations Core program can prepare you for an entry level position in a production firm, or allow you to transition in to a more specialized program like Welding or Machine Technology. Students develop fundamental skills that apply to many trades and industries, and many of the courses are common to more advanced degree programs.

### Program of Study:

#### Manufacturing Occupations Core

### Certificate: COP — Certificate of Proficiency

#### General Education Requirements

##### Communications Requirement

ENGL 110	Industrial Communications recommended	5
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##### Computation Requirement

MATH 092	Elementary Algebra or higher (MATH 106 Industrial Mathematics recommended)	5
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##### Human Relations/Social Sciences Requirement

BUS 144	(was BSAD 126) Mgmt of Human Relations recommended	5
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##### Health Requirement

HLTH 100	Occupational Safety and Health	3
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BLPT 150	Machinists Blueprint Reading <i>or</i>	
BLPT 160	Blueprint Reading for Welders	5
HDEV 110	Job Finding Skills	3
MASP 107	Machining for Related Occupations <i>and/or</i>	
MASP 111	Machine Shop I	10
MFG 115	Manufacturing Processes	5
DRFT 107	Technical Graphics <i>or</i>	
MFG 130	Materials Science <i>or</i>	
MFG 230	Computer Integrated Manufacturing <i>or</i>	
TECH 100	Adv Prin of Technology <i>or</i>	
WELD 158	Welding Theory and Fabrication	3, 4 or 5
WELD 105	Related Welding	6

<b>Total Credits</b>		<b>49-51</b>
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## Math

**Program of Study: Undergraduate Studies for Future Secondary Math Teachers****Degree: AM-DTA/MRP — Associate in Math Education — Direct Transfer Agreement****Program Requirements**

Communications Requirements

ENGL&amp; 101 English Composition I 5

ENGL 102 English Composition 5

**Quantitative Skills Requirements**

MATH&amp; 151 (was MATH 151) Calculus I 5

**Humanities/Diversity Requirements**SPCH 110 Intro to Public Speaking *and* 5

10 credits selected from the Humanities distribution list.

No more than 10 credits from any one discipline.

No more than 5 credits in foreign language at the 100 level.

No more than 5 credits in performance/skills courses are allowed. 10

**Natural Science Requirements**

MATH&amp; 152 (was MATH 152) Calculus II 5

5 credits of science (phys, chem., geol, or biol.) 5

5 credits of lab science (phys, chem., geol, or biol.) 5

**Social Science/Diversity Requirements**

PSYC&amp; 100 (was PSYC 111) General Psychology 5

10 credits selected from the Social Science distribution list.

No more than 10 credits allowed from any one discipline. 10

**Other Requirements**

EDUC&amp; 205 (was EDUC 110) Intro to Education w/Field Exp 5

MATH&amp; 153 (was MATH 153) Calculus II 5

MATH 154 Calculus IV 3

MATH 220 Linear Algebra 5

Plus 12 additional credits selected from the distribution list defined by the receiving institution as fully transferable. 12

**Total Minimum Credits 90**

## Medical Assisting

Medical assistants work with physicians and other health care providers, contributing support services in the office or laboratory. Prerequisites include MATH 070 or higher and ENGL 100 or higher, both with a grade of C or better. You must also pass a BTEC keyboarding exam or complete BTEC 101 with a grade of C or better.

Work closely with your program advisor to plan your quarterly schedule, as MEDA classes are offered just once yearly and must be taken in sequence. You may take other required courses out of sequence as long as prerequisites are met. No person found guilty of a felony is eligible to take the certification examination without a waiver from the AAMA certifying board.

**Degree: AAS — Associate in Applied Science****General Education Requirements****Communications Requirement**ENGL& 101 English Composition I *or*BUS 119 (was BSAD 190) Business Communications *and*

ENGL 102 English Composition 10

**Computation Requirement**

MATH 105 Mathematics for Health Sciences 5

**Human Relations Requirement\***

PSYC&amp; 100 (was PSYC 111) Intro to General Psychology 5

**Natural Sciences/Humanities Requirement**

From distribution list 5

**Diversity Requirement**

From distribution list 5

**Program Requirements**

BTEC 171 Medical Reception Procedures 3

BTEC 172 Medical Office Procedures 4

BTEC 173 Computers in the Medical Office 3

MEDA 101 Medical Vocabulary *or*

BTEC 181 Medical Terminology I 3

MEDA 102 Medical Vocabulary II *or*

BTEC 182 Medical Terminology II 3

MEDA 120 Survey of Human Anatomy & Physiology *or*

BIOL 221/222 Human Anatomy and Physiology 5-10

MEDA 121 Health Care Law 1

MEDA 122 Health Care Ethics and AIDS Education 2

MEDA 145 Medical Laboratory Techniques 4

MEDA 146 Invasive Procedures 2

MEDA 161/162 Examining Room Procedures I/II 6

MEDA 164 Medication Administration &amp; Injection 1

MEDA 165 Medications in Medical Assisting &amp; Diseases 3



MEDA 190	Medical Assisting Externship	6
MEDA 195	Medical Assisting Seminar	1
Electives*		<u>14</u>
<b>Total Credits</b>		<b>91-96</b>

\*To complete your degree, the electives must be courses numbered 50 and above. Of those, 5 credits must be from the social science or natural science transfer degree distribution list. For this degree, CHEM& 100 can be added to this list. The balance of your electives may come from any distribution or elective list. Math courses may not be used.

## Certificate: COP — Certificate of Proficiency

### Prerequisites:

- MATH 070 (or higher) with a grade of C or better
- ENGL 100 (or higher) with a grade of C or better
- Pass BTEC keyboarding exam or complete BTEC 101 with a grade of C or better.

### General Education Requirements

#### Communications Requirement

- ENGL& 101 English Composition I *or*
- BUS 119 (was BSAD 190) Business Communications 5

#### Computation Requirement

- MATH 105 Mathematics for Health Sciences 5

#### Human Relations/Social Sciences Requirement

- PSYC& 100 (was PSYC 111) Intro to General Psychology 5

### Program Requirements

- MEDA 101 Medical Vocabulary *or*
- BTEC 181 Medical Terminology I 3
- MEDA 102 Medical Vocabulary II *or*
- BTEC 182 Medical Terminology II 3
- BTEC 171 Medical Reception Procedures 3
- BTEC 172 Medical Office Procedures 4
- BTEC 173 Computers in the Medical Office 3
- MEDA 120 Survey Human Anatomy & Physiology *or*
- BIOL 221/222 Human Anatomy and Physiology 5-10
- MEDA 121 Health Care Law 1
- MEDA 122 Health Care Ethics and AIDS Education 2
- MEDA 145 Medical Laboratory Techniques 4
- MEDA 146 Invasive Procedures 2
- MEDA 161/162 Examining Room Procedures I/II 6
- MEDA 164 Medication Administration and Injections 1
- MEDA 165 Medication in Medical Assisting/Diseases 3
- MEDA 190 Medical Assisting Externship 6
- MEDA 195 Medical Assisting Seminar 1

**Total Credits 62-67**

## Music

### Program of Study: Contemporary Musicianship & Audio Production

#### Degree: AAS — Associate in Applied Science

This two-year program is designed to provide students without prior formal training in music an understanding of modern digital and analogue recording techniques, music production and marketing, and modern pop/rock music theory. Students will also be required to study privately on their instrument(s)/and/or voice and participate in weekly performances of popular music ensembles.

In their audio production courses students will learn to use hardware and software to record, store and digitally edit musical examples culminating in the production of a professional quality demo CD. As their final project in the program students will present in a public forum their finished CD recording of a musical ensemble. The CD will be of professional, commercial quality, complete with appropriate artwork and liner notes.

### General Education Requirements

#### Communications Requirement

- ENGL& 101 English Composition I 5

#### Computation Requirement

- MATH 092 Elementary Algebra 5

#### Social Science/Human Relations Requirement

- PSYC& 100 (was PSYC 111) Intro to General Psychology 5

#### Health Requirement

- HLTH 106 Health Today *or* 2-3
- HLTH 100 Occupational Safety & Health

#### Humanities/Natural Science/Diversity Requirement

- MUSC 119 American Music 5

### Program Requirements

- MUSC 100 Fundamentals of Music 5
- MUSC 106 Group Piano Instruction 2
- MUSC 116 and 216 Musicum Practicum 6
- MUSC 127, 128, 226, 227, 228 Applied Music 5
- MUSC 161 Digital Audio I 5
- MUSC 162 Digital Audio II 5
- MUSC 163 Digital Audio III 5
- MUSC 181 Contemporary Musicianship and Applications I 3
- MUSC 182 Contemporary Musicianship and Applications II 3
- MUSC 261 Advanced Audio Production I 5
- MUSC 262 Advanced Audio Production II 5
- MUSC 263 Advanced Audio Production III 5
- MUSC 281 Contemporary Musicianship and Applications III 3



MUSC 282	Contemporary Musicianship and Applications IV	3
MUSC 284	AAS Degree Project	3
<i>Electives</i>		
BUS& 101	(was BSAD 110) Intro to Business <i>and</i>	
CS 110	(was CIS 110) Intro to Microcomputer Applications	8
	Recommended	
	<b>Total Credits</b>	<b>93-94</b>

### Certificate: COP — Certificate of Proficiency

CS 110	(was CIS 110) Intro to Microcomputer Applications	3
ENGL& 101	English Composition I	5
MATH 092	Elementary Algebra	5
PSYC& 100	(was PSYC 111) General Psychology	5
MUSC 100	Fundamentals of Music	5
MUSC 106	Group Piano Instruction	2
MUSC 116	Musicum Practicum	3
MUSC 127, 128	Applied Music	2
MUSC 161	Digital Audio I	5
MUSC 162	Digital Audio II	5
MUSC 163	Digital Audio III	5
MUSC 181	Contemporary Musicianship and Applications I	3
MUSC 182	Contemporary Musicianship and Applications II	3
	<b>Total Credits</b>	<b>51</b>



## Nursing

The LCC Nursing Program is committed to providing excellence in nursing education, which encompasses holistic caring, respect for individuality and diversity, accountability and responsibility, critical thinking, and clinical expertise. The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the National League for Nursing Accrediting Commission.

The Associate Degree may be completed in eight quarters; however, most students take longer. You must complete college-required assessment in math, English, and reading. Placement on these assessments may require you to take additional courses to prepare you to enroll in college-level courses.

Entrance requirements include High School Diploma or GED, High School Chemistry and Human Biology, First Aid and CPR, and Nursing Assistant Certification issued by the Washington or Oregon Department of Health. If you are interested in a nursing career, work closely with your advisor to set realistic goals for entry into LCC's nursing program. Detailed requirements for admission and progression are described in the Nursing Program Admission Handbook, which is available through campus advisors or at our website, <http://www.lowercolumbia.edu/nursing> or by calling 360-442-2860.

Students may exit the program after four quarters at the licensed practical nurse level. LPNs wishing to return to school may apply for acceptance into the registered nursing level in our traditional program or the web-based LPN to RN bridge program. You may also transfer for RN-BSN program completion after meeting additional requirements. LCC has close articulation with Washington State University Vancouver.

Optional courses, the Retention Achievement Project (RAP), the Learning Center, Writing Lab, Peer Tutoring, and other supportive opportunities are available throughout the program to help you master course objectives and to meet your educational goals.

For clinical courses, you must work with agencies that will require you to successfully pass a criminal background clearance (state and federal) and drug testing. You will also need selected immunizations and current CPR for health care professionals. You will need to pay for these yourself. You may be denied program admission and progress if you are not in compliance with clinical agencies' requirements.

Earning a nursing degree or certificate at LCC does not assure you of licensure. You must also pass the national licensing exam and meet other requirements.

### Program of Study: Practical Nurse Level

#### Certificate: COP — Certificate of Proficiency

##### *General Education Requirements*

##### *Communications Requirement*

ENGL& 101 English Composition I

5



**Computational Requirement**

MATH 099 Intermediate Algebra 5

**Social Science Requirements**

PSYC& 100 (was PSYC 111) General Psychology 5

**Natural Science Requirement**

BIOL 221 Human Anatomy and Physiology 5

**Health Requirement**

NURS 101 Nursing Foundations 5

**Program Requirements (co-requisites, four quarters)**

AH 101 Healthcare Foundations I 1

AH 102 Healthcare Foundations II 1

AH 131 Therapeutic Communications I 1

AH 132 Therapeutic Communications II 1

BIOL 222 Human Anatomy and Physiology 5

BIOL& 260 (was BIOL 257) Microbiology 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 Family Nursing - Clinical 5

PSYC& 200 (was PSYC 205) Lifespan Psychology 5

**Total Credits**

**79**

**Program of Study: Registered Nurse Level**

**Degree: AAS — Associate in Applied Science**

**Practical Nurse Requirements**

**79**

**Program Requirements (co-requisites, three quarters)**

ANTH& 206 (was ANTH 207) Cultural Anthropology *or*

SOC& 101 (was SOCY 110) Intro to Sociology 5

CHEM& 121 (was CHEM 111) Intro to Chemistry 5

NURS 201 Advanced Comprehensive Nursing I 5

NURS 202 Advanced Comprehensive Nursing II 5

NURS 203 Advanced Comprehensive Nursing III 5

NURS 221 Advanced Comprehensive Nursing Clinical I 5

NURS 222 Advanced Comprehensive Nursing Clinical II 5

NURS 223 Advanced Comprehensive Nursing Clinical III 5

**Total Credits**

**119**

**LPN to RN Distance Education Program**

5 Lower Columbia College's LPN to RN (LPN2RN) online option of the nursing program has been developed to provide an accessible means for working LPNs to return to college. The program can be completed on a full-time or part-time basis.

5 More information on the courses is on page 114. A full description of the program, admission requirements, and courses can be found at [lowercolumbia.edu/LPN2RN](http://lowercolumbia.edu/LPN2RN).

**Program of Study: Nursing Assistant—Certified**

**Certificate: COC — Certificate of Completion**

You may also take the state-approved 8-credit Nursing Assistant course (Nursing 090), which has no pre-requisite and does not require formal admission to the Nursing Program.

**Program Requirement**

NURS 090 Nursing Assistant 8

**Physics Education**

**Program of Study: Undergraduate Studies for Future Secondary Physics Teachers**

**Degree: AS-T APE/MRP (Opt. 1) — Associate in Physics Education — Transfer**

**General Education Requirements**

**Communications Requirements**

ENGL& 101 English Composition I 5

ENGL 102 English Composition 5

**Mathematics Requirements**

MATH& 151 Calculus I 5

MATH& 152 Calculus II 5

**Humanities/Social Science/Diversity Requirements**

PSYC& 100 (was PSYC 111) General Psychology 5

SPCH 110 Intro to Public Speaking 5

5 additional credits from distribution list. 5

Three different subject areas required. No more than 5 credits of performance classes allowed.

**Pre-Major Requirements**

CHEM& 161 (was CHEM 151) General Chem w/Lab I 5

CHEM& 162 (was CHEM 152) General Chem w/Lab II 5

CS 170 (was CIS 180) Fundamentals of Computer Programming 5

MATH& 153 (was MATH 153) Calculus II 5



MATH 154	Calculus IV	3	MFG 140	Applied Hydraulics	4
MATH 220	Linear Algebra	5	MFG 205	Work Teams in Industrial Settings	5
MATH 240	Differential Equations	5	PULP 101	Intro to Pulp & Paper Manufacturing	5
PHYS 251	General Physics	5	PULP 102	Paper Processes	5
PHYS 252	General Physics	5	PULP 104	Survey of Paper Conversion Techniques	3
PHYS 253	General Physics	5	PULP 214	Intro to Process Technology	5
<i>Electives</i>			PULP 224	Maintenance in Pulp & Paper	5
EDUC& 205	(was EDUC 110) Intro to Ed w/ Field Exp	5	PULP 225	Paper Chemistry and Environment	5
5 additional credits from the distribution list.			<b>Total Credits</b>		<b>105</b>
<b>Total Credits</b>		<b>93 minimum</b>			

## Pulp & Paper Manufacturing Technology

Technicians working in the pulp and paper industry or in related support industries receive supplemental training through this program. The flexible curriculum allows students to select courses that best fit their career goals. See the program advisor for more information.

### Degree: AAS — Associate in Applied Science

#### General Education Requirements

##### Communications Requirement

ENGL 100	English Fundamentals <i>or</i>	
ENGL& 101	English Composition I	5

##### Computation Requirement

MATH 099	Intermediate Algebra	5
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##### Human Relations Requirement/Social Science/Diversity

BUS 144	(was BSAD 126) Mgmt of Human Relations	5
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##### Health Requirement

HLTH 100	Occupational Safety and Health	3
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##### Natural Sciences Requirement

CHEM& 100	(was CHEM 100) Preparatory Chemistry or higher	5
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#### Program Requirements

BLPT 120	Basic Blueprint Reading	3
SPCH 110	Intro to Public Speaking	5
CS 110	(was CIS 110) Intro to Microcomputer Applications	3
IMT 131	Industrial Electricity – DC	5
IMT 132	Industrial Electricity –AC	5
IMT 231	Electrical Control Equip	3
IMT 232	Electrical Motors	2
INTC 101	Process Control I	6
INTC 102	Process Control II	6
MFG 105	Industrial Safety	3
MFG 120	Quality Assurance	4

### Certificate: COC — Certificate of Completion

#### Natural Sciences requirement

CHEM& 100	Preparatory Chemistry or higher	5
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#### Program Requirements

PULP 101	Intro to Pulp & Paper Technology	5
PULP 102	Paper Processing	5
PULP 104	Survey of Paper Conversion Techniques	3
Technical electives*		5

**Total Credits** **23**

\*Technical electives may be any combination of courses numbered 050 and above from the following related areas: Chemistry, Computer Information Systems, Electronics, Industrial Maintenance, Instrumentation, Mathematics, Manufacturing, Mechanical Engineering Technology, Pulp, or Technology.



## Science Education

### Program of Study: Undergraduate Studies for Future Secondary General Science Teachers

**Degree: AS-T AGSE/MRP (Opt. 1) — Associate in General Science Education — Transfer**

#### *General Education Requirements*

##### *Communications Requirements*

ENGL& 101	English Composition I	5
ENGL 102	English Composition	5

##### *Mathematics Requirements*

MATH& 151	Calculus I	5
MATH& 152	Calculus II	5

##### *Humanities/Social Science/Diversity Requirements*

PSYC& 100	(was PSYC 111) General Psychology	5
SPCH 110	Intro to Public Speaking	5

#### *Pre-Major Requirements*

CHEM& 161 (was CHEM 151) General Chemistry w/Lab I *and*  
 CHEM& 162 (was CHEM 152) General Chemistry w/Lab II *and*  
 CHEM& 163 (was CHEM 153) General Chemistry w/Lab III

*and/or*

BIOL 201	General Biological Science <i>and</i>
BIOL 202	General Biological Science <i>and</i>
BIOL 203	General Biological Science

*and/or*

PHYS 101	Introductory Physics <i>and</i>
PHYS 102	Introductory Physics <i>and</i>
PHYS 103	Introductory Physics

*and/or*

PHYS 251	General Physics <i>and</i>
PHYS 252	General Physics <i>and</i>
PHYS 253	General Physics

*and/or*

GEOL 117	Geology of Earth's Surface <i>and</i>
GEOL 118	Historical Geology

*and*

MATH 210	Elements of Statistics	45-50
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#### *Electives*

EDUC& 205	(was EDUC 110) Intro to Ed w/Field Exp	5
5 additional credits	from distribution list.	<u>5</u>

**Total Minimum Credits 90**

## Technology

**Degree: AT-DTA/MRP — Associate in Technology — Direct Transfer Agreement**

#### *Program Requirements*

##### *Communications Requirements*

ENGL& 101	English Composition I	5
ENGL& 235	(was ENGL 220) Technical Writing	5

##### *Quantitative Skills Requirements*

MATH 150	Precalculus	5
MATH 215	Discrete Structures	5

##### *Humanities/Diversity Requirements*

SPCH 110	Introduction to Public Speaking and 10 credits from Humanities distribution list, with no more than 5 credits from world language and no more than 5 credits in a performance skills class (marked with an * on the distribution list).	5 10
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##### *Social Science Requirements*

Select from at least two disciplines, no more than 10 credits in a single discipline. 15

##### *Natural Science Requirements*

CHEM& 161	(was CHEM 151) General Chem w/Lab I	5
CS 170	(was CIS 180) Fundamentals of Computer Programming	5
PHYS 101	Introductory Physics	5

##### *Technology Requirement*

ENGR& 121	(was ENGR 111) Engineering Graphics I	3
ENGR& 122	(was ENGR 112) Engineering Graphics II	3

##### *Electives*

20 credits of electives – courses selected appropriate for intended major and intended bachelor's

Institutions such as:

IMT 131, IMT 132, IMT 133, PHYS 102, PHYS 103	<u>20</u>
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**Total Minimum Credits 91**

Notes: This degree is only applicable for students who are planning to attend Central Washington University, Eastern Washington University or Western Washington University.

A maximum of 10 elective 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.



## Welding

### Degree: AAS — Associate in Applied Science

Prepare for the state commercial welding examination or qualify for welding jobs in manufacturing, maintenance, or instruction through LCC's Welding program. You must successfully complete the Washington Association of Building Officials (WABO) Qualification Test before an AAS degree in welding can be awarded.

#### General Education Requirements

Communications Requirement

ENGL 110 Industrial Communications recommended 5

#### Computation Requirement

MATH 106 Industrial Mathematics recommended 5

#### Human Relations/Social Sciences/Diversity Requirement

BUS 144 (was BSAD 126) Mgmt of Human Relations recommended 5

#### Natural Sciences/Humanities Requirement

MFG 130 Materials Science or

TECH 100 Advanced Principles of Technology 5

#### Health Requirement

HLTH 100 Occupational Safety & Health recommended 3

#### Program Requirements

BLPT 160 Blueprint Reading for Welders 5

CS 110 (was CIS 110) Intro to Microcomputer Applications 3

WELD 151 Introduction to Oxy-Acetylene 6

WELD 152 Introduction to Arc Welding 10

WELD 158 Welding Theory & Fabrications 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 or 075 Welding Certification 0

**Total Credits 94**

The following certificate programs help you prepare for employment in manufacturing or maintenance:

### Certificate: COP — Certificate of Proficiency

#### General Education Requirements

##### Communications Requirement

ENGL 110 Industrial Communications 5

##### Computation Requirement

MATH 106 Industrial Math 5

##### Human Relations/Social Sciences Requirement

BUS 144 (was BSAD 126) Management of Human Relations 5

##### Health Requirement

HLTH 100 Occupational Safety and Health 3

#### Program Requirements

BLPT 160 Blueprint Reading for Welders 5

CS 110 (was CIS 110) Intro to Microcomputer Applications 3

WELD 151 Introduction to Oxy-Acetylene 6

WELD 152 Introduction to Arc Welding 10

WELD 158 Welding Theory and Fabrication 5

WELD 221 Wire Machine 10

**Total Credits 57**

### Certificate: COC — Certificate of Completion

BLPT 160 Blueprint Reading for Welders 5

HLTH 100 Occupational Safety and Health 3

MATH 106 Industrial Math 5

WELD 151 Introduction to Oxy-Acetylene 6

WELD 152 Introduction to Arc Welding 10

WELD 158 Welding Theory and Fabrication 5

WELD 221 Wire Machine 10

**Total Credits 44**

## Symbols used in course description

### Symbol/Definition

<b>H</b>	Course meets distribution credit in Humanities.
<b>HA</b>	Course meets distribution credit in Humanities only for AAS and AAS-T degrees.
<b>SS</b>	Course meets distribution credit in Social Science.
<b>SSA</b>	Course meets distribution credit in Social Science only for AAS and AAS-T degrees.
<b>NS</b>	Course meets distribution credit in Natural Science.
<b>NSA</b>	Course meets distribution credit in Natural Science only for AAS and AAS-T degrees.
<b>NSL</b>	**Course meets distribution credits in Natural Science as a lab course.
<b>P</b>	*Course meets distribution credits as a performance based course.

**&** = Course is part of the Washington Community Colleges' Common Course Numbering system.

## Adult Basic Education (ABE)

### ABE 011 1-10 cr ABE Level I

Provides instruction for adults in math, reading, and writing at grade equivalent 0.0-1.9, including whole number addition and subtraction, very basic computer skills, communication skills, decision making skills, and lifelong learning skills for basic survival needs.

*Prerequisite:* Appropriate CASAS score

### ABE 012 1-10 cr ABE Level II

Provides instruction for adults in math, reading and writing at grade equivalent 2.0-3.9, including reading real-life materials with understanding, computations with fractions, conveying ideas in writing using a variety of sentences of increasing complexity, goal-setting, and using word processing.

*Prerequisite:* Appropriate CASAS score

### ABE 013 1-10 cr ABE Level III

Provides instruction for adults in math, reading and writing at grade equivalent 4.0-5.9, including reading real-life materials with understanding, computing with fractions, conveying ideas in writing using a variety of sentences of increasing complexity, goal-setting, and using word processing.

*Prerequisite:* Appropriate CASAS score

### ABE 014 1-10 cr ABE Level IV

Provides instruction for adults in math, reading and writing at grade equivalent 6.0-8.9, including use of percent, ratio and proportion, simple formulas, and tables and graphs, reading expository writing, writing using several connected paragraphs with correct mechanics, and using most computer applications.

*Prerequisite:* Appropriate CASAS score

### ABE 015 1-10 cr Basic GED Preparation

Provides instruction to prepare students to pass the General Educational Development (GED) test. Students complete this level when they can pass at least three official GED practice tests.

*Prerequisite:* Appropriate CASAS score

### ABE 016 1-10 cr Advanced GED Preparation

Provides continued instruction to prepare students to pass the General Educational Development (GED) test. Students complete this level when they have successfully completed all parts of the official GED Test.

*Prerequisite:* Appropriate CASAS score

## Accounting (ACCT)

### ACCT 101 5 cr Introduction to Accounting Concepts

Provides students with an introduction to the field of accounting. Topics include the accounting cycle, accounting for and presentation of assets, liabilities, and owner's equity.

*Prerequisite:* No previous accounting courses are required.

### ACCT 150 5 cr Payroll Accounting and Business Tax Reporting

Gives students experience in payroll accounting and business tax reporting. Topics include payroll processing, payroll tax return preparation, and preparation of excise tax returns.

*Prerequisite:* MATH 092 and ACCT 101 or instructor permission.



**ACCT& 201 (was ACCT 231)** 5 cr

**Principles of Accounting I**

(was titled Financial Accounting I)

Includes an introductory study of financial accounting and accounting theory. Includes an in-depth study of the accounting cycle for service organizations, provides an introduction to merchandising transactions, cash, marketable securities, receivables, and inventory.

*Prerequisite:* MATH 092. No previous accounting courses are required.

**ACCT& 202 (was ACCT 232)** 5 cr

**Principles of Accounting II**

(was titled Financial Accounting II)

Studies the components of a simple corporate balance sheet including application to transactions in areas such as current liabilities, long-term assets, bonds, and stocks. Also introduces the statement of cash flows and financial statement analysis. Financial accounting theory is discussed and applied throughout the course.

*Prerequisite:* ACCT& 201 (was ACCT 231) with a grade of C or better.

**ACCT& 203 (was ACCT 233)** 5 cr

**Principles of Accounting III**

(was titled Managerial Accounting)

Includes internal reports, cost accounting, master budget, relevant costs, capital budgeting, direct and absorption costing, cost behavior and cost volume profit analysis, and performance measurement. Microcomputer spreadsheet applications are utilized in problem solving.

*Prerequisite:* ACCT& 202 (was ACCT 232) with a grade of C or better and basic spreadsheet skills.

**ACCT 241** 4 cr

**Computerized Accounting Concepts**

Provides students experience with a multi-function electronic accounting system. Students will learn to enter business transactions in the general ledger and subsidiary accounts such as payroll, accounts receivable, accounts payable, inventory, and fixed assets. Students will solve common accounting problems associated with the electronic accounting process.

*Prerequisite:* ACCT 101, ACCT& 201 (was ACCT 231) or instructor permission.

**ACCT 294** 1 cr

**Career Success**

Provides preparation for pursuing a career in accounting, with a focus on self-assessment, job search, application process documents, and interviewing techniques.

*Prerequisite:* Program Advisor permission.

## Allied Health (AH)

**AH 094** 2 cr

**Fundamentals of Caregiving**

Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum on client and caregiver rights, community resources, personal care, prevention of injury and infection, nutrition, assisting with medications, mobility needs, requirements for nurse delegation and observation and recording, and medical and physical conditions.

**AH 095** 1 cr

**Modified Fundamentals of Caregiving**

Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum on client and caregiver rights, resources for the caregiver, prevention of infection, nutrition, assisting with medications, requirements for nurse delegation and observation and recording.

**AH 096** 1 cr

**Nurse Delegation Training for Caregivers**

Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum providing an in-depth understanding of the nurse delegation law, basic medical knowledge of body systems and selected nursing tasks that may be delegated by a Registered Nurse.

**AH 100** 1 cr

**Blood Borne Pathogens and Infection Control**

Examines blood borne illnesses: etiology, epidemiology, clinical manifestations, treatment, transmission, testing, infection control, legal, ethical, psychosocial and counseling issues. Fulfills Washington State Department of Licensing requirement for license renewal for persons governed by Chapter 18.130.RCW.(GE)

**AH101** 1 cr

**Healthcare Foundations I**

Provides healthcare career information, legal and behavioral expectations of employers for quality healthcare environments and the types of healthcare organizational structures.

*Prerequisite:* High School Diploma or GED Certificate. Appropriate scores in the entry test. Meet the requirements for LCC students assigned to health care agencies, which include: Request the forms from Nursing/Allied Health, background check, drug screen, and current immunizations and TB records. Any exceptions to the admission requirements must be approved by the program director and the dean.



**AH 102** 1 cr  
**Healthcare Foundations II**

Emphasizes the legal/ethical and safe practices needed to provide positive teamwork and client relationships. The impact of financial, ethical, and legal aspects will be discussed.

*Prerequisite:* High School Diploma or GED Certificate. Appropriate scores in the entry test. Meet the requirements for LCC students assigned to health care agencies, which include: Request the forms from Nursing/Allied Health, background check, drug screen, and current immunizations and TB records. Any exceptions to the admission requirements must be approved by the program director and the dean. Must have received a grade of C or better in AH 101, or equivalent.

**AH 112** 1 cr  
**Body Structure, Function and Terminology I**

Basic anatomy and function are discussed with an introduction to using the correct basic medical terminology. Common medical terms for body systems, structure and function will be discussed.

*Prerequisite:* High School Diploma or GED Certificate. Appropriate scores in the entry test. Meet the requirements for LCC students assigned to health care agencies, which include: Request the forms from Nursing/Allied Health, background check, drug screen, and current immunizations and TB records. Any exceptions to the admission requirements must be approved by the program director and the dean.

**AH 131** 1 cr  
**Therapeutic Communications I**

Concentrates on understanding self and presentation of self to healthcare clients with respect, compassion and confidentiality.

*Prerequisite:* High School Diploma or GED Certificate. Appropriate scores in the entry test. Meet the requirements for LCC students assigned to health care agencies, which include: Request the forms from Nursing/Allied Health, background check, drug screen, and current immunizations and TB records. Any exceptions to the admission requirements must be approved by the program director and the dean.

**AH 132** 1 cr  
**Therapeutic Communications II**

Emphasizes awareness, sensitivity and respect for the diversity of clients and staff.

*Prerequisite:* High School Diploma or GED Certificate. Appropriate scores in the entry test. Meet the requirements for LCC students assigned to health care agencies, which include: Request the forms from Nursing/Allied Health, background check, drug screen, and current immunizations and TB records. Any exceptions to the admission requirements must be approved by the program director and the dean. Completion of AH 131 with a C or better.

## Anthropology (ANTH)

**ANTH& 205 (was ANTH 206)** 5 cr  
**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.

**ANTH& 206 (was ANTH 205)** 5 cr  
**Cultural Anthropology** 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. This may be offered as a Capstone course. See page 31 for Capstone prerequisites. Meets the associate's degree cultural diversity requirement.

## Art (ART)

**ART& 100 (was ART 110)** 3-5 cr  
**Art Appreciation**

(was titled Intro to Art Appreciation) 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 slide lectures, demonstrations, discussion, and field trips. Students cannot earn credit for both this course and ART 114. Meets the associate's degree cultural diversity requirement.

**ART 101** 3 cr  
**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.

**ART 102** 3 cr  
**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 the instructor permission.

**ART 103** 3 cr  
**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. Includes some independent projects.

*Prerequisite:* 102 or instructor permission.



- ART 106** **Basic Design** **5 cr**  
**H, P**  
Introduces the theory and fundamentals of visual organization through the explanation of black and white media.
- ART 107** **Basic Design** **5 cr**  
**H, P**  
Introduces the theory and application of color to specific two-dimensional and three-dimensional design problems.
- ART 108** **Basic Design** **3 cr**  
Introduces three-dimensional form and space with emphasis on materials, spatial composition, and fabrication.
- ART 111** **Beginning Painting** **3 cr**  
**H, P**  
Introduces the use of oil and acrylic painting media and the study of traditional painting concepts and techniques.
- ART 112** **Intermediate Painting** **3 cr**  
**H, P**  
Presents more in-depth exploration of painting materials, techniques, and subject matter.  
*Prerequisite:* ART 111 or instructor permission.
- ART 113** **Advanced Painting** **3 cr**  
**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 114** **Introduction to Art Appreciation: Study Abroad** **3-5 cr**  
**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 slide lectures, demonstrations, discussion, and field trips. Students cannot earn credit for both this course and ART& 100 (was ART 110).
- ART 119** **Watercolor Painting** **3 cr**  
**H**  
Introduces students to the transparent and opaque techniques of watercolor painting. Color, composition, and technical control are emphasized.
- ART 151** **Beginning Black & White Photography** **3 cr**  
**H, P**  
Covers the fundamentals of 35mm camera operation, exposure and focusing controls, film processing, and making black & white photographic prints for presentation. Includes composition, group critiques, and exposure to great works of photography. Requires 35mm camera with adjustable focusing, aperture, and shutter.
- ART 152A** **Intermediate Black & White Photography - Studio** **3 cr**  
**H, P**  
Further explores camera vision and pushes the limit of camera controls to create black & white photographic images. Students explore film speeds, advanced exposure control, and film testing, and will gain more understanding and control over lighting. Focused on studio photography. Students will also refine camera and darkroom skills and participate in photo critiques.  
*Prerequisite:* ART 151 or instructor permission.
- ART 152B** **Intermediate Black & White Photography - Photojournalism** **3 cr**  
**H, P**  
Provides students who have completed ART 151 the opportunity to gain experience and skills needed for photojournalism/documentary photography. Learn how to utilize film speeds and exposure control, related to different applications on location in order to create photo essays.  
*Prerequisite:* ART 151 or instructor permission.
- ART 153** **Advanced Photographic Techniques** **3 cr**  
Provides students with a continuation of photography experiences in studio, documentary, and fine art applications.  
*Prerequisite:* ART 152A or ART 152B or instructor permission.
- ART 162** **Beginning Photoshop Design** **3 cr**  
Introduces Adobe Photoshop and principles of graphic design. Includes menus, palettes, tools, layers, masks, channels, image correction, manipulation techniques and vector graphics. Presents digital imagery concepts, legal aspects, ethics and development of photo design awareness. Emphasizes skill building applicable to photography, web site design, illustration, design portfolios and design aesthetics.  
*Prerequisite:* Basic computer skills required.
- ART 164** **Beginning Video Production Design** **3 or 5 cr**  
This course consists of lecture/demonstration and hands-on operation of digital video equipment. It introduces Adobe Premiere, Insciber and principles of video production and presents basic design principles as applied to video.  
*Prerequisite:* Basic computer skills are recommended.



**ART 165** **3 or 5 cr**

**Intermediate Video Production Design**

This course consists of lecture/demonstration and hands-on operation of digital video equipment. It continues work with Adobe Premiere, Inscrber, principles of video production and intermediate design principles as applied to video. It adds instruction in Aftereffects and the use of a full production suite (VT4) for live video production design.

*Prerequisite:* Satisfactory completion of ART 164 or instructor permission.

**ART 166** **3 or 5 cr**

**Advanced Video Production Design**

This course consists of lecture/demonstration and hands-on operation of digital video equipment in studio and field projects. It continues work with Adobe Premiere, Inscrber, principles of video production, introducing advanced skills and techniques. It develops advanced design principles applied to video production and introduces Light Wave 3D Animation and the creation of special effects.

*Prerequisite:* ART 165 or instructor permission.

**ART 171** **3 cr**

**Printmaking—Etching**

Introduces basic techniques of etching, relief printing, and monotypes. For beginning students.

**ART 206** **5 cr**

**Arts of the Americas** **H**

Provides an introduction to the diversity of American art, past and present. Studies the development of artistic themes and styles in the Americas and analyzes works in a variety of media. Includes work by Native American, Euro-American and Latin American artists. Course includes field trips, slide lectures and seminars. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

**ART 207** **5 cr**

**Arts of the World** **H**

Introduces non-western arts. Focuses on selected art forms and types from Africa, Asia, Oceania, and the Middle East. Studies and analyzes ideas and issues, past and present, expressed in the arts of diverse cultures, and contrasts and compares work in a variety of media. Course includes field trips, slide lectures, and seminars. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

**ART 208** **5 cr**

**Arts of the Northwest** **H**

Introduces the arts of the Northwest, past and present. Studies and analyzes works in a variety of styles and media and notes the diverse sources used by contemporary Northwest artists. Course includes

field trips, slide lectures and seminars. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

**ART 226** **5 cr**

**History of Art** **H**

Establishes a basis for judgment for sculpture, painting, and architecture through a survey of the purposes and development of art from 35,000 B.C. to 500 A.D. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**ART 227** **5 cr**

**History of Art** **H**

Studies shifting forms and purposes in the visual arts, establishing a basis for critical judgment in sculpture, painting, and architecture through a survey of art from 500 A.D. to A.D. 1600. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**ART 228** **5 cr**

**History of Art** **H**

Studies the history of Western art from 1500 A.D. through the mid-20th Century, including evaluation of contemporary sculpture, painting, and architecture as a product of its time and place. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**ART 241** **3 cr**

**Beginning Ceramic Art, Pottery** **H, P**

Begins with study of ceramic materials, including techniques of hand construction and wheel throwing.

**ART 242** **3 cr**

**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** **3 cr**

**Advanced Ceramic Art, Pottery**

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** **1-3 cr**

**Art Studio Lab—Ceramics**

Provides lab opportunity in ceramics for students who have completed ART 241, 242, 243.

*Prerequisite:* Instructor permission.



ART 295 1-3 cr

**Art Studio Lab—Photography**

Provides lab opportunity in photography for students who have completed ART 151 or higher.

*Prerequisite:* ART 153 or instructor permission.

## Astronomy (ASTR)

ASTR 110 3 or 5 cr  
**Descriptive Astronomy NS, 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. Course can be taken for 3 credits (lecture only) or for 5 credits (lecture and lab).

## Automotive Technology (ADT)

ADT 100 5 cr  
**Essentials of Mechanics**

Develops beginning mechanical skills and knowledge essential to successful completion of the automotive and/or diesel technology program. Includes shop safety, fasteners, measurements, cutting tools, lifting, tool usage, shop orientation, manuals (including computer retrieval systems), bearings and seals, and special emphasis on preventative/predictive maintenance.

ADT 101 5 cr  
**Electrical Systems I**

Covers the theory of electricity from fundamentals through solid state. Includes Ohm's Law, series, parallel, and series-parallel circuits. Automotive wiring and circuits will be included, as well as how to read wiring diagrams, and circuit tracing and repair.

ADT 102 10 cr  
**Electrical Systems 2**

Presents brief review of the theory of electricity. Covers theory, diagnosis and repair of low voltage systems (12V), including batteries, starting systems, charging systems, instrumentation and warning devices, lighting systems, power accessories, (e.g. power windows, power seats), and computer operation and circuit analysis. Also covered are high voltage energy, distributorless, and breaker point ignition systems.

*Prerequisite:* ADT 101 or instructor permission.

ADT 104 6 cr

**Vehicle Climate Control**

Studies the theory of operation, design, diagnosis and repair of both manual and automatic heating/air conditioning systems used in automobiles and truck/heavy equipment applications. This is a second year course.

ADT 111 5 cr  
**Hydraulic Brakes**

Covers the theory of hydraulics, fundamentals of manual, power, drum, and disc brake systems.

ADT 112 3 cr  
**Antilock Brakes and Traction Control**

Presents brief review of hydraulic brakes giving complete coverage of theory, diagnosis, and how to repair antilock brakes and traction control systems. This will include scan tool diagnosis as well as functional and visual tests.

*Prerequisite:* ADT 111 or instructor permission.

ADT 121 5 cr  
**Gas Engines I**

Provides an introductory course for the student with little or no experience with gasoline engines. Covers theory of operation, performance factors, and routine diagnosis and maintenance of spark ignition engines.

ADT 122 5-10 cr  
**Gas Engines II**

Covers all facets of the internal gasoline engine. Includes theory of operation, removing, inspecting, cleaning, measuring, machining, reassembling, reinstalling, and testing. The student will completely rebuild a gasoline engine.

*Prerequisite:* ADT 121 or instructor permission.

ADT 200 5 cr  
**Internship**

Provides paid or unpaid work experience in the discipline (Automotive or Diesel) that the student is majoring in. The class will give the students hands-on experience to familiarize them with work in an industrial setting.

*Prerequisite:* 36 credits or more of ADT courses or instructor permission.

ADT 201 10 cr  
**Fuels and Emissions**

Provides a study in the theory of operation, diagnosis and repair of carburetors, gasoline fuel injection, fuel storage systems and fuel delivery systems. Air pollution from the automobile will be studied as well as the systems used to control the pollutants

*Prerequisite:* ADT 101 and 102 or instructor permission.



**ADT 202** **10 cr**  
**Computer Engine Controls**  
 Presents theory of operation, diagnosis and repair techniques of computer controlled electronic engine systems.

*Prerequisite:* ADT 101, 102, and 201 or instructor permission.

**ADT 215** **8 cr**  
**Suspension and Alignment**  
 Prepares the student to perform all aspects of automotive type suspension and alignment work, including powered and non-powered steering systems, inspection, diagnosis, adjustment, and repair of front and rear suspension systems, and related components such as tires and wheels. Use of four-wheel alignment equipment is an integral part of this course.

**ADT 216** **8 cr**  
**Automatic Transmission**  
 Studies hydraulic principle of pressure and force multiplication, operation, diagnosis and repair of automotive automatic transmissions and transaxles.

**ADT 217** **6 cr**  
**Powertrains**  
 Studies the theory of operation, diagnosis and repair of clutches, manual transmission/transaxles, drivelines, drive axles and transfer cases.

## Biology (BIOL)

**BIOL& 100** **5 cr**  
**Survey of Biology** **NSL**  
 Examines major concepts in biology—the science of life—and the nature of science itself and includes survey of fundamental life processes by which organisms live, grow, reproduce, and interact with their environment. This course is recommended for students interested in a brief overview of biology. Laboratory is included.

**BIOL 130** **5 cr**  
**Plants of the Pacific Northwest** **NSL**  
 This course surveys natural groups of vascular plants and emphasizes native and exotic species and families represented in the Pacific Northwest flora. Plant morphology, taxonomy, principles of systematics and biogeography will be introduced. Evolutionary, genetic and reproductive patterns in plants will also be studied. Laboratory is included, with field trips. Students will gain practical experience in plant identification, recognition of plant communities, and collection, preservation, and labeling of voucher specimens.

**BIOL 150** **5 cr**  
**Human Genetics and Society** **NSL**  
 This course is designed to introduce the student to the discipline of Human Genetics by interweaving classical genetics concepts

with major genetic “issues” including genetic diversity, the human genome, biotechnology, and genetic disorders. Following completion of the course, students will have the tools to make informed decisions regarding the impact of genetic advances on society as well as their own personal lives. Meets the associate’s degree cultural diversity requirement. Laboratory is included.

**BIOL& 170 (was BIOL 120)** **5 cr**  
**Human Biology** **NS**  
 Introduces students to such fundamental biological principles as the cell and metabolism, then progresses through tissues to human organ systems including respiratory, circulatory, digestive, reproductive, immune and others. Also surveyed are heredity and human ecology.

**BIOL 201** **5 cr**  
**General Biological Science** **NSL**  
 Introduces the first course in a three-quarter sequence for science majors. Topics of study explore the form and function of plants and animals at the cellular and sub-cellular levels of organization, including the chemical basis of life, metabolism, cell biology, genetics, and molecular biology. Laboratory is included.  
*Prerequisite:* CHEM& 161 (was CHEM 151) or CHEM& 121 (was CHEM 111) or instructor permission.

**BIOL 202** **5 cr**  
**General Biological Science** **NSL**  
 Continues principles of biology, with emphasis upon the organismal level of organization, including a comprehensive coverage of basic anatomy and physiology of plants and animals. Laboratory is included.  
*Prerequisite:* BIOL 201 or instructor permission.

**BIOL 203** **5 cr**  
**General Biological Science** **NSL**  
 Explores higher levels of, organization, including the diversity of life, origins, and classification of living organisms; evolutionary theory, principles and consequences, ecology; behavior and population dynamics. Laboratory is included.  
*Prerequisite:* BIOL 202 or instructor permission.

**BIOL 221** **5 cr**  
**Human Anatomy and Physiology** **NSL**  
 Provides a study of structure and function of the human body. Units of study include the cell, tissues, skeletal system, articulations, muscular system, and nervous system. This is the first of a two-course sequence.  
*Prerequisite:* BIOL& 170 (was BIOL 120) or equivalent, or instructor permission.



**BIOL 222** 5 cr  
**Human Anatomy and Physiology** NSL

Continues the study of the structure and function of the human body. Units of study include endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems. Laboratory is included.

*Prerequisite:* BIOL 221 with a C- or better, or instructor permission.

**BIOL& 260 (was BIOL 257)** 5 cr  
**Microbiology**

Studies the biology of microorganisms, including history, taxonomy, morphology, physiology and relationships to the physical and economic well being of humanity. Laboratory includes techniques for isolation, cultivation and identification of microbes.

*Prerequisite:* BIOL& 170 (was 120), or BIOL 221, or instructor permission.

## Blueprint (BLPT)

**BLPT 120** 3 cr  
**Basic Blueprint Reading**

Provides basic general information in reading and understanding plans and drawings that will be useful to vocational students with any major. 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.

**BLPT 150** 5 cr  
**Machinists Blueprint Reading**

Provides basic general information in reading and understanding plans and drawings that will be useful to vocational students. Focusing on line and symbol conventions used in industrial blueprints and visualization of solid objects from orthographic and isometric projections, the course leads to development of required skills for industrial design and problem solving. It also provides comprehensive information needed by persons in the machine trades for reading industrial blueprints and emphasizes specifications of materials, geometrical tolerancing, surface finishes, AWS welding symbols, and related foundry processes.

**BLPT 160** 5 cr  
**Blueprint Reading for Welders**

Provides basic general information in reading and understanding plans and drawings that will be useful to students in the welding field, focusing on identifying basic lines, dimensions, structural shapes, welding symbols, and basic joints for welding fabrication and practical layout design.

*Prerequisite:* Math 106 or instructor permission.

## Business Administration (BUS) (was BSAD)

**BUS& 101 (was BSAD 110)** 5 cr  
**Introduction to Business** SS

Surveys the business environment and many important elements of business including marketing, finance, accounting, computers, labor unions, small business management, economics, and the functions of management.

**BUS 104 (was BSAD 104)** 5 cr  
**Business Math Applications**

Teaches the use of basic mathematical processes to solve business applications. Topics include percentages, simple interest, compound interest, annuities, markups, markdowns, payroll, trade and cash discounts, banking, and solving problems with equations and formulas.

*Prerequisite:* MATH 091 with a grade of C or better or instructor permission.

**BUS 118 (was BSAD 135)** 5 cr  
**Ethics in Management**

Surveys current business ethical issues and concerns and is presented using the case study method. Through interactions, students will gain an understanding of how ethical considerations become a part of business decisions. Emphasis will be placed on advertising, affirmative action, product liability, employee rights, management/supervisory interactions, and corporate morality.

**BUS 119 (was BSAD 190)** 5 cr  
**Business Communications**

Emphasizes planning, organizing, and writing clear, concise business letters. Includes a review of grammar, punctuation, and word usage as applied to written business communication; experience in writing favorable messages. Students will present information orally and prepare a job resume and letter of application.

*Prerequisite:* ENGL 100 with a C or better or placement test into ENGL& 101.

**BUS 144 (was BSAD 126)** 5 cr  
**Management of Human Relations** SSA

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, 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. Meets the associate's degree cultural diversity requirement.



**BUS 150 (was BSAD 164) 5 cr**  
**Customer Service/Management**

Introduces the philosophy of “service excellence” as it pertains to organizations in today’s business environment. Emphasis on the effects of globalization, cultural diversity, and workforce diversity in organizations. Topics include developing interpersonal skills, interacting effectively with employees and customers, and establishing positive relationships with employees and customers with regard to their gender and culture. Students will learn to identify the challenges and advantages of a diverse workforce. Meets the associate’s degree cultural diversity requirement.

**BUS 159 (was BSAD 160) 5 cr**  
**Principles of Retailing**

Surveys retailing principles and concepts and studies store management, merchandise management, pricing, customer services, advertising, and display.

**BUS 165 (was BSAD 115) 5 cr**  
**Salesmanship**

Surveys multiple aspects of selling, including the importance of selling and salespeople in business and the rewards of a sales career. Topics include: buying behaviors, the ethical and legal issues in sales, the buying process, the approach, the presentation, demonstration of merchandise, handling of objectives, closing the sale, follow-up and effective sales management.

**BUS& 201 (was BSAD 251) 5 cr**  
**Business Law SS**

Introduces sources of law, where to find the law, court structure, and the initiation of a civil law suit. Concentrates on the area of contracts with particular emphasis on the Uniform Commercial Code. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**BUS 206 (was BSAD 206) 5 cr**  
**Statistical Methods NS**

Introduces the student to descriptive statistics, probability and inferential statistical methods. Topics include probability distributions, sampling techniques, measures of central tendency and dispersion, correlation, regression, hypothesis testing and statistical inference. Credit cannot be earned for both BUS 206 and MATH 210.

*Prerequisite:* MATH 099 with a grade of C or better.

**BUS 207 (was BSAD 207) 3 cr**  
**Statistical Projects NS**

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 (was BSAD 240) 5 cr**  
**Principles of Supervision**

Analyzes basic functions of the supervisory-level management along with emphasis on skills needed to be an effective leader/manager of a diverse workforce. Emphasis will be on the differences between supervisors and upper management.

**BUS 244 (was BSAD 260) 5 cr**  
**Human Resource Management**

Introduces the fundamental concepts of Human Resource Management, including hiring skills, long-term planning, employee laws, recruitment, staffing, training, compensation programs (both direct and indirect), collective bargaining, employee relations, safety training, health and EAPs (employee assistance programs).

*Prerequisite:* Concurrent enrollment in ENGL& 101 or equivalent test score.

**BUS 245 (was BSAD 275) 5 cr**  
**Principles of Management**

Offers the student a history of management and its various theories. Covers the principles and application of planning, organizing, leading and controlling. Students also view management from the roles of supervisory, middle and top management.

**BUS 259 (was BSAD 111) 5 cr**  
**Starting/Managing a Small Business**

Surveys the characteristics of small businesses, and includes the study of planning and organizing a new business, starting up a new business, producing products or services, marketing, planning, and control. Students are required to develop and present a feasibility plan and business plan for a proposed business.

*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 (was BSAD 263) 5 cr**  
**Principles of Marketing**

Presents marketing functions and their roles in the economic process, emphasizing marketing systems, product planning, promotion, and sales.

*Prerequisite:* BUS& 101 (was BSAD 110) or instructor permission.

**BUS 265 (was BSAD 270) 5 cr**  
**Advertising**

Provides an overview of the related fields of sales and advertising. The course encompasses economics of selling and selling processes, and studies field of advertising with emphasis on planning, implementing and controlling the advertising process.

**BUS 294 1 cr**  
**Career Success**

Provides preparation for pursuing a career in business, with a focus on self-assessment, job search, application process documents, and interviewing techniques.

*Prerequisite:* Program advisor permission.



## Business Technology (BTEC)

**BTEC 100** 1-3 cr

### Computer Keyboarding

Introduces keyboarding using the microcomputer and individualized instruction media. Provides instruction and practice on the alphabet, number, and symbol keys, and the 10-key numeric keypad. Graded on a pass/fail basis.

**BTEC 101** 1-5 cr

### Basic Word Processing/Formatting

Emphasizes skill building, proofreading, basic word processing concepts including letters, memos, tables and basic reports.

*Prerequisite:* BTEC 100 with a grade of C or better or instructor permission

**BTEC 104** 5 cr

### Introduction to Business Technology

Introduces current business software and technology. Students receive hands-on practice in electronic communication and information retrieval, word processing, spreadsheet analysis, graphic presentation, and database management. Integrates career planning, effective teamwork and workplace ethics.

**BTEC 105** 1-4 cr

### Keyboarding Speed/Accuracy Building

Provides an individualized skill-building program for students who need or want to increase their keyboarding accuracy. Graded on a pass/fail basis.

*Prerequisite:* BTEC 100 with grade of C or better or instructor permission.

**BTEC 106** 1-2 cr

### Proofreading Skills

Builds student skills in finding, marking, and correcting errors in business communications. Provides special techniques for locating errors.

*Prerequisite:* ENGL 100 or ENGL&101 (was ENGL 101) or BUS 119 (was BSAD 190), each with a grade of C or better or instructor permission.

**BTEC 111** 5 cr

### Intermediate Word Processing

Increases students' knowledge of Microsoft Word through classroom instruction and guided practice including tables, columns, reports, mail merge, fliers, graphics, styles, templates, macros, and file management. Students will utilize software features to properly format business documents.

*Prerequisite:* BTEC 101 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** 5 cr

### Advanced Word Processing

Presents advanced word processing features using Microsoft Word. Students design and format tri-fold brochures and magazine articles; create fill-in form templates, outlines, table of contents, master documents and advanced tables; use advanced editing techniques and advanced merging.

*Prerequisite:* BTEC 111 with a grade of C or better or instructor permission, and a minimum keyboarding speed of 40 wpm or concurrent enrollment in BTEC 105.

**BTEC 113** 5 cr

### Applied Word Processing & Desktop Publishing

Provides project-based applications that integrate word processing, spreadsheets, databases, accounting, desktop publishing and business communications to build and reinforce document-processing skills. Communication, problem-solving, and organizational skills are emphasized to prepare students for the workplace.

*Prerequisite:* BTEC 112 with a grade of C or better or instructor permission, and a minimum keyboarding speed of 40 wpm or concurrent enrollment in BTEC 105.

**BTEC 125** 1-3 cr

### Filing

Introduces four major types of filing according to the ARMA rules: alphabetic, geographic, numeric, and subject. Rules for alphabetic indexing are emphasized. Practice is given in coding, indexing, and filing. Computerized filing using MS Access is also included.

**BTEC 130** 1-2 cr

### Electronic Calculators

Develops speed and accuracy by touch on the ten-key electronic calculator and the computer numeric keypad. Includes using special features of a calculator and applying learned skills to business problems.

**BTEC 145** 1-5 cr

### Introduction to MS Word

Introduces students to Microsoft Word features that may be used in both personal and business environments. Topics include basic and intermediate-level document formatting. This class is offered in a lab environment.

*Prerequisite:* BTEC 100 or instructor permission.

**BTEC 147** 1-3 cr

### Introduction to Desktop Publishing

Provides hands-on instruction using Microsoft Publisher. Emphasizes formatting and enhancing text, developing styles, using columns and tables with special effects, and working with art, Design Gallery, Page Wizard, and drawing tools to create professional-looking publications. This class is offered in a lab environment.



*Prerequisite:* BTEC 145 with a grade of C or better or instructor permission.

**BTEC 148** 1-2 cr  
**Introduction to Outlook**

Offers an introduction to using Outlook communication and scheduling as a business tool. This course is designed to prepare students with a full understanding of features available in Outlook. Topics covered include email, contacts, schedule management, and instant messaging.

**BTEC 161** 4 cr  
**Intro to ICD-9 Coding in the Medical Office (Part I)**

Teaches the rules and guidelines utilized in the assignment of ICD-9 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 with a grade of C or better or instructor permission.

**BTEC 162** 4 cr  
**Intro to ICD-9 Coding in the Medical Office (Part II)**

Continues to develop and reinforce the rules and guidelines utilized in the assignment of ICD-9 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 164** 1-2 cr  
**Legal Aspects of the Medical Office**

Presents the legal, ethical, and bioethical issues relevant to medical office settings. Course features legal cases and legislation. Topics include patient confidentiality, advance directives, consents, professional liability, medical malpractice, release of information, and the professional code of ethics.

**BTEC 169** 3 cr  
**Introduction to Basic CPT Coding**

Introduces the rules and guidelines of Current Procedural Terminology (CPT) coding, which is utilized in the reimbursement of outpatient procedures and surgeries. Students will learn how to use the CPT coding book. Course also introduces the evaluation and management processes used for physician reimbursement and the government regulations regarding CPT coding.

*Prerequisite:* BTEC 162 with a grade of C or better or instructor permission.

**BTEC 171** 3 cr  
**Medical Reception Procedures**

Provides a foundation of basic knowledge and skills for employment

in a doctor's office or clinic. Topics include reception techniques, medical records and related laws, appointment scheduling, telephone use and message taking, and office maintenance.

**BTEC 172** 4 cr  
**Medical Office Procedures**

Provides instruction and practice for advanced administrative support skills employed in the medical office. Topics include payroll procedures, banking; fees, credit and collections; patient and insurance billing; bookkeeping, including practice in single-entry methods; and diagnostic and procedural coding.

*Prerequisite:* ENGL 100 or instructor permission, MATH 070 or instructor permission, and BTEC 171, each with a grade of C or better.

**BTEC 173** 3 cr  
**Computers in the Medical Office**

Prepares students for administrative tasks in health care practices. Using computer software students learn to input patient information, schedule appointments and handle billing and insurance claims.

*Prerequisite:* BTEC 172 with a grade of C or better.

**BTEC 181** 1-3 cr  
**Medical Terminology I**

Provides a foundation for building a medical vocabulary including the study of prefixes, roots, suffixes, combining forms, and pronunciation. Emphasis is on using medical terms accurately in documenting and reporting patient care procedures.

**BTEC 182** 1-3 cr  
**Medical Terminology II**

Continues the focus of BTEC 181 incorporating actual medical records and demonstrating how medical terminology is used in the clinical setting. Electronic media are used.

*Prerequisite:* BTEC 181 or MEDA 101 each with a grade of C or better.

**BTEC 185** 1-3 cr  
**Medical Machine Transcription**

Provides intensive transcription practice from actual hospital medical records or prerecorded tapes of medical case histories, admissions, operative reports, and other materials used by the medical profession.

*Prerequisite:* BTEC 101 and either BTEC 182 or MEDA 102, each with a grade of C or better.

**BTEC 186** 1-3 cr  
**Advanced Medical Machine Transcription**

Continues to develop students' medical transcription skills. Students transcribe from actual hospital medical records.

*Prerequisite:* BTEC 185 with a grade of C or better.



**BTEC 211** 1-3 cr

### Machine Transcription

Develops correct techniques for operating a transcribing machine while emphasizing spelling, punctuation, grammar, document formatting, and related word processing techniques.

*Prerequisite:* BTEC 101 and either BUS 119 (was BSAD 190) or ENGL& 101 (was ENGL 101) each with a grade of C or better or instructor permission.

**BTEC 231** 1-3 cr

### Legal Terminology/Transcription

Provides instruction in legal terminology including definitions of terms and correct pronunciation. Further practice is provided through required transcription of dictated legal material.

*Prerequisite:* BTEC 101 with a grade of C or better or instructor permission.

**BTEC 232** 1-3 cr

### Legal Transcription

Develops skills in preparing various specialized legal documents. Machine transcription skills are essential.

*Prerequisite:* BTEC 231 with a grade of C or better.

**BTEC 260** 5 cr

### Office Procedures

Serves the needs of Business Technology students completing their BTEC program. Students will practice and enhance essential skills for today's modern office including teamwork, time management, employment preparedness, basic bookkeeping, critical thinking, office technology, communication, and cultural diversity awareness to prepare them for transition from school to work.

*Prerequisite:* BTEC 112, BUS 119 (was BSAD 190), and BUS 104 (was BSAD 104) each with a grade of C or better or instructor permission.

**BTEC 294** 1 cr

### Career Success

Provides preparation for pursuing a career in business technology, with a focus on self-assessment, job search, application process documents, and interviewing techniques.

*Prerequisite:* Program advisor permission.

## Chemical Dependency Studies (CDS)

**CDS 101** 3 cr

### Introduction to Chemical Dependency Counseling

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 is the primary course for students interested in a career counseling the chemically dependent.

**CDS 102** 3 cr

### Introduction to Theories and Counseling of Chemically Dependent Clients

Introduces the student to the need for a theoretical base for CD counseling. Students will learn the fundamental concepts of at least three contemporary theories of counseling, and will gain a working knowledge of brief therapy.

*Prerequisite:* CDS 101 with a C or better.

**CDS 105** 3 cr

### Chemical Dependency/Domestic Violence

Provides students with a basic understanding of social problems and legal issues relative to domestic violence and its impact on children and families. Cross-listed with HOFL 105.

**CDS 106 (was CDS 206)** 3 cr

### Prevention/Intervention Specialist

Provides a general overview of prevention, philosophies and school-based substance abuse prevention/intervention models. This course will also cover information about the role and function of the prevention/intervention specialist, school infrastructure, and systemic dynamics that may sabotage prevention efforts. This course is designed for CD counselors, nurses, social workers, counselors and teachers; instructor permission required for others to enroll.

**CDS 107 (was CDS 207)** 3 cr

### Adolescent Developmental Issues and Chemical Dependency

Examines the special issues and challenges of working with adolescent chemical abuse and dependency. This class will cover the following: adolescent development tasks; assessment process and tools; diagnostic challenges; treatment and recovery considerations; co-occurring disorders and relapse prevention. It will also cover information about family assessment, treatment, and recovery issues.

**CDS 108 (was CDS 208)** 3 cr

### Running School-Based Support Groups

This is an experiential course during which students will practice running several types of substance abuse groups that are commonly found in a school setting. We will discuss how these groups differ in a school setting versus a treatment setting. The course will discuss three types of groups: Alcohol/Drug Information groups, Concerns Persons group, and Recovery groups. We will discuss each group's structure and content. Also we will go over the basics of group development.



**CDS 110 (was CDS 211) 3 cr**  
**Alcohol/Drug Pathophysiology and Pharmacology**

Reviews the human body with emphasis on the action of alcohol and other frequently abused drugs on each of the systems. Drug classification, prescription and non-prescription, drug interactions, poly-drug abuse, detoxification process, acute and post-acute withdrawal signs and systems will be studied. Fetal effects from substance abuse will be examined.

*Prerequisite:* CDS 101, 102, and 113 with a C or better.

**CDS 111 3 cr**  
**Record Keeping and Case Management**

Introduces the student to case management and record keeping techniques. Assessment, diagnosis, individual treatment planning, charting, and continuing care planning will be explored. Confidentiality utilization review and staffing techniques will be discussed.

*Prerequisite:* CDS 101 with a C or better.

**CDS 113 (was CDS 213) 3 cr**  
**Treatment Principles of Chemical Dependency**

Provides a working knowledge of treatment principles and models. It will explore the anatomy of addiction and the principles and process of treatment. This includes principles of relapse, relapse prevention and stages of recovery.

**CDS 121 3 cr**  
**Legal and Ethical Issues in Chemical Dependency Studies**

Studies ethical and legal issues in chemical dependency counseling. Counselor/client professional relationship will be reinforced.

**CDS 201 3 cr**  
**Dynamics of the Family and Chemical Dependency**

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 (was CDS 211) or obtain instructor permission.

*Prerequisite:* CDS 101, 102, 113, and 215 with a C or better.

**CDS 202 3 cr**  
**Chemical Dependency Counseling with Diverse Populations**

This course is designed to prepare the chemical dependency counselor for working with individuals and families from diverse populations. The goal of the course is to raise the level of awareness and cultural sensitivity of the chemical dependency counselor. It will

challenge the student to examine culturally learned assumptions that shape their interactions with clients. It helps the chemical dependency counselor become more knowledgeable about social structures that cause inequality and its effect on treatment.

*Prerequisite:* CDS 101, 102, 113, and 121 or instructor permission.

**CDS 203 3 cr**  
**Relapse Prevention and Intervention**

This course is designed to educate the chemical dependency counselor on all aspects of the relapse process. This includes assessment, education, and intervention, relapse treatment plans, family involvement, and stress management.

*Prerequisite:* CDS 101, 102, and 113 or instructor permission.

**CDS 215 3 cr**  
**Group Counseling: Theories and Application**

Provides the student with the theory and the practice of group counseling with chemical dependent clients and the 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 with a C or better.

**CDS 220 3 cr**  
**Co-Occurring Disorders: Mental Health Disorders In CDS**

Examines the mental/emotional alterations and their impact on the client with chemical dependency. Use of current edition of the Diagnostic and Statistical Manual as it relates to diagnosis.

*Prerequisite:* Instructor permission.

**CDS 235 3 cr**  
**Advanced Family Counseling**

Provides the student with the major theories of families and family therapy. Application of selected theories will be adapted to the chemically dependent family therapy.

*Prerequisite:* Must be a practicing counselor in the State of Washington or have instructor permission.

**CDS 240 3 cr**  
**Compulsive Sexual Behavior**

Focuses on the assessment, clinical and theoretical clarification and treatment of a number of forms of compulsive sexual behaviors. A distinction between addictive, compulsive, and impulsive sexual behavior will be presented as well as various theories of the condition's development. A variety of treatment modalities will be reviewed.



## Chemistry (CHEM)

**CHEM& 100** 5 cr  
**Preparatory Chemistry**

(was titled Introductory Chemistry)

**NSA**

Introduces the world of chemistry through the exploration of matter and the basic properties related to what our surroundings are composed of. Students will examine laws, formulas, reactions, and structure governing all substances and their interactions. Prepares students for further study in chemistry. No credit is given to those with one year of recent high school chemistry credit.

**CHEM 105** 5 cr  
**Survey of Chemistry** **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.

*Prerequisite:* Completion of or concurrent enrollment in Math 091.

**CHEM 120** 5 cr  
**Nutrition** **NS**

Offers a scientific approach to the study of nutrition, which includes anatomy, chemical breakdown and metabolism, weight management, disease processes, and relation to lifestyle.

**CHEM& 121 (was CHEM 111)** 5 cr  
**Intro to Chemistry**

(was titled Basic General 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.

*Prerequisite:* CHEM& 100 (was CHEM 100) or one year of high school chemistry, completion of, or concurrent enrollment in MATH 091.

**CHEM& 131 (was CHEM 112)** 5 cr  
**Intro to Organic/Biochem**

(was titled Organic Chemistry)

**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.

*Prerequisite:* CHEM& 121 (was CHEM 111) or CHEM& 161 (was CHEM 151).

**CHEM& 161 (was CHEM 151)** 5 cr  
**General Chem w/Lab I**

(was titled General Chemistry)

**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.

*Prerequisite:* CHEM& 100 (was CHEM 100) or high school chemistry. Competence in algebra is necessary.

**CHEM& 162 (was CHEM 152)** 5 cr  
**General Chem w/Lab II**

(was titled General Chemistry)

**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.

*Prerequisite:* CHEM& 161 (was CHEM151).

**CHEM& 163 (was CHEM 153)** 5 cr  
**General Chem w/Lab III**

(was titled General Chemistry)

**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.

*Prerequisite:* CHEM& 162 (was CHEM 152).

**CHEM 231** 5 cr  
**Quantitative Analysis**

Provides a study of the qualitative and quantitative analytical applications of chemistry including the mathematical treatment of data collected. It will examine gravimetric and volumetric wet chemical analysis. Instrumental analysis of both organic and inorganic substances will be done. This is a one-quarter course required for students who are chemistry and chemical engineering majors.

*Prerequisite:* Completion of, or concurrent enrollment in CHEM& 163 (was CHEM 153).

**CHEM& 261 (was CHEM 251)** 5 cr  
**Organic Chem w/Lab I**

(was titled Organic Chemistry)

Explores the chemistry of organic compounds including structures, nomenclature, bonding, and properties of basic organic compounds.



The course covers the families of alkanes, alkenes, and alkynes, and discusses functional groups and stereochemistry and their roles in chemical properties. This is the first in a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included.

*Prerequisite:* CHEM& 163 (was CHEM 153) or instructor permission.

**CHEM& 262 (was CHEM 252) 5 cr**  
**Organic Chem w/Lab II**

(was titled Organic Chemistry)

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.

*Prerequisite:* CHEM& 261 (was CHEM 251).

**CHEM& 263 (was CHEM 253) 5 cr**  
**Organic Chem w/Lab III**

(was titled Organic Chemistry)

Continues the exploration of the chemistry of organic compounds including structures, nomenclature, and synthesis of basic organic compounds. The course covers the families of amines, carbonyls, aromatics, biochemical compounds and other groups of compounds. Reactions and synthesis of various compounds will be studied and performed. Products of these processes will be examined using physical and spectroscopic means. The course includes a qualitative analysis of organic compounds. This is the third of a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included.

*Prerequisite:* CHEM& 262 (was CHEM 252).

## College Success (COLL)

**COLL 100 5 cr**  
**College Success**

Emphasizes development of necessary skills for successful completion of college courses. Provides techniques and strategies to improve time management, memory, lecture note taking, textbook reading, outlining, learning styles, use of library, test preparation, and test taking. Focuses on how individuals become independent learners and critical thinkers. Empowers students to apply learning strategies in all other content classes.

## Computer Science (CS) (was Computer Information Systems - CIS)

**CS 100 (was CIS 100) 5 cr**

**Introduction to Information Systems**

Presents a general overview of information technology. Introduces the student to the complex array of components that make up an information system. The technology and human issues involved in developing a successful information system as well as career paths and ethical issues facing these professionals will be covered.

**CS 101 (was CIS 101) 3 cr**

**Introduction to Internet Theory and Application**

Introduces Internet history and concepts: development, controlling organizations, standards, usage, and other issues. Application topics include email, FTP, browsers, search methods, and web sites. The course project is the development of a web site.

*Prerequisite:* Proficiency with keyboard and mouse.

**CS 102 (was CIS 102) 5 cr**

**Intermediate Internet Theory, Application, and Web Page Design**

Offers concepts, fundamentals, and techniques of web page design, and introduction to Internet networking principles. Topics include web page usability, design principles and development, site planning, and implementation, (X)HTML scripting language and basic 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 108 (was CIS108) and CS 110 (was CIS110) or equivalent or instructor permission.

**CS 104 (was CIS 104) 5 cr**

**Intermediate Web Page Design**

Continuation of Web Page Design using client and server side scripted/programming languages and dynamic page coding to extend design capabilities and Web Site effectiveness. Methods introduced include browser control, security related issues, and Web Page structural/presentational control using these languages.

*Prerequisites:* CS 102 (was CIS 102), CS 170 (was CIS 180) or equivalent, or instructor permission.

**CS 105 (was CIS 105) 1 cr**

**Windows Fundamentals**

Offers an introduction to Microsoft's Windows operating system. Students learn to use the mouse; find, move, copy, rename, and delete user files; find "lost" files; and use basic Windows programs. (See CS 110)



- CS 106 (was CIS 106)** 1 cr  
**Word Processing Fundamentals**  
 Offers an introduction to word processing, using Microsoft Word to type text and create documents, correct and delete text, work with margins, format, print, retrieve, save, and use other basic word processing functions. (See CS 110)
- CS 107 (was CIS 107)** 1 cr  
**Spreadsheet Fundamentals**  
 Offers an introduction to electronic spreadsheets, using Microsoft Excel to create, retrieve, and work with basic spreadsheets, enter and edit data, create formulas to calculate values, print, format, and use other basic spreadsheet function.
- CS 108 (was CIS 108)** 1 cr  
**Internet Fundamentals**  
 Offers an introduction to the Internet. A Web browser is used to access the World Wide Web, to send and receive email messages, to search for information, and to perform other basic Internet functions.
- CS 109 (was CIS 109)** 1 cr  
**Fundamentals of PowerPoint**  
 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.
- CS 110 (was CIS 110)** 3 cr  
**Introduction to Microcomputer Applications**  
 Introduces the student to microcomputers and software applications. Windows, word processing, and electronic spreadsheets basics are presented.  
*Prerequisite:* Ability to use a keyboard.
- CS 111 (was CIS 150)** 4 cr  
**Intro to Windows**  
 Offers an introduction to the study of the Microsoft Windows operating systems. Presents fundamental concepts of a Microsoft Windows client operating systems, such as file management and customizing a graphical user interface (GUI).
- CS 121 (was CIS 120)** 5 cr  
**Introduction to Spreadsheets**  
 Provides an introduction to the use of spreadsheet programs in business applications. Students are provided with practical experience in using a spreadsheet to solve common business problems.  
*Prerequisite:* BTEC 104 or CS 110 (was CIS 110), MATH 092 or BUS 104 (was BSAD 104), or instructor permission.
- CS 122 (was CIS 220)** 5 cr  
**Advanced Spreadsheet Applications**  
 Offers an introduction to more advanced spreadsheet topics. The student will use complex features such as macros, data management, and advanced formulas and functions to solve business problems. This course is intended for CS majors and business students who are ready for a challenging spreadsheet class.  
*Prerequisite:* CS 121 (was CIS120) with a grade of C or better, or instructor permission.
- CS 130 (was CIS 130)** 5 cr  
**Introductory Database Applications**  
 Offers an introduction to the study and use of computerized database management systems. This course provides basic database theory and application in a disciplined approach to problem solving in a business environment.  
*Prerequisite:* CS 121 (was CIS 120) with a grade of C or better, or instructor permission
- CS 144** 3 cr  
**Principles of PC Operating Systems**  
 Offers an introduction to the study of microcomputer operating systems using both graphical environment and command line. This course is designed to prepare students with IT profession entry-level skills in operating systems. Topics covered include OS fundamentals, installation, diagnosis, configuration, and troubleshooting for the Windows and Linux operating systems.
- CS 170 (was CIS 180)** 5 cr  
**Fundamentals of Computer Programming NS**  
 Offers an introduction to computer programming concepts and the development of applications. Program development, style, testing, and documentation are presented, discussed and applied using the C# programming language. This course is a beginning course for CS majors and others wishing an introduction to computer programming.  
*Prerequisite:* MATH 092 and knowledge of Windows is required
- CS 175 (was CIS 185)** 5 cr  
**Event-Driven Programming**  
 Offers an introduction to designing and implementing Windows applications using Visual Basic. Concepts involving event-driven programming, graphical user interface design, and algorithm implementation are covered.  
*Prerequisite:* CS 170 (was CIS180).



**CS 208 (was CIS 260) 5 cr**  
**Introduction to Management Information Systems**

Introduction to the principles, roles, and application of Management Information Systems (MIS) in business. Investigations into MIS include hands-on lab experiences and case studies.

*Prerequisite:* BUS& 101 (was BSAD 110), ENGL& 101 (was ENGL 101), or instructor permission. CS 110 (was CIS 110) recommended.

**CS 211 (was CIS 211) 5 cr**  
**Networking Basics**

Offers an introduction to the study and use of microcomputer networks. Includes topics covered in the COMPTIA Network+ exam: network topologies, standards, hardware, software, media and protocols.

*Prerequisite:* CS 114 with a grade of C or better or instructor permission.

**CS 212 (was CIS 212) 4 cr**  
**Local Area Networks: Theory and Application**

Offers study of Local Area Networks. This course provides theory and practice in a disciplined approach to installing and maintaining a microcomputer network utilizing a network operating system. Students will apply their learning by developing and maintaining a Local Area Network in the laboratory.

*Prerequisite:* CS 211 (was CIS 211) or instructor permission.

**CS 213 (was CIS 213) 4 cr**  
**Local Area Networks: Theory and Application**

Offers further study of data communications and Local Area Networks. This course provides theory and practice in a disciplined approach to maintaining a data communication system utilizing LAN software. Students will apply their learning by developing, monitoring and optimizing a Local Area Network in the laboratory.

*Prerequisite:* CS 212 (was CIS 212) or instructor permission.

**CS 216 (was CIS 216) 2 cr**  
**Network Scripting**

Introductory course in shell scripting for the Windows and Linux operating systems. This course introduces both the Windows Script Host (WSH) using VBScript and the BASH shell used as an interface to the Linux operating system kernel. Students will learn to write, test, and execute scripts to manipulate client and network resources.

*Prerequisite:* CS 170 (was CIS 180) and CS 249 (was CIS 252) or instructor permission.

**CS 230 (was CIS 230) 5 cr**  
**Database Development**

Offers further study and use of computerized database management systems. Provides intermediate theory and practice in a disciplined approach to problem solving using a database management system in a business environment.

*Prerequisite:* CS 130 with a grade of C or better, and CS 170 (was CIS 180) or instructor permission

**CS 245 (was CIS 251) 6 cr**  
**Computer Configuration and Maintenance**

Offers the computer student an introduction to the configuration of hardware in computer systems. In the laboratory, students will build computers, install operating systems and application software, troubleshoot computers and install computers and peripherals in a network environment. This course will provide a foundation in hardware for those working toward A+ Certification.

*Prerequisite:* CS 114 with a grade of C or better.

**CS 249 (was CIS 252) 5 cr**  
**Advanced Operating Systems**

Offers further study of microcomputer operating systems. This course addresses advanced concepts that are applicable to a variety of operating systems with an emphasis on Linux.

*Prerequisite:* CS 111 (was CIS 150) and CS 170 (was CIS 180) with a grade of C or better.

**CS 260 (was CIS 240) 5 cr**  
**Introduction to Network Security**

Offers an introduction to the study of network security. This course gives the student an opportunity to learn and apply basic security concepts to a local area network. Students will apply their learning by designing a network security plan and using a variety of network security tools.

*Prerequisite:* CS 211 (was CIS 211) or instructor permission.

**CS 264 5 cr**  
**Computer Forensics**

Offers a study of computer forensics. This course gives the student an opportunity to learn and apply basic concepts of computer forensics in a laboratory setting. Students will apply their learning by using investigative tools to solve simulated computer crimes.

*Prerequisite:* CS 245 (was CIS 251) and CS 249 (was CIS 252).

**CS 270 (was CIS 280) 5 cr**  
**Introduction to Data Structures NS**

Offers a detailed study of structured programming, algorithms, searching and sorting, and data structures using the programming language C++.

*Prerequisite:* MATH 099 and CS 170 (was CIS 180).



CS 275 (was CIS 285) 5 cr

### Object-Oriented Programming in Java

Offers an introduction to the object-oriented programming paradigm using Java. Various object-oriented programming concepts will be discussed. Object-oriented programs will be developed and implemented.

*Prerequisite:* CS 170 (was CIS 180) or instructor permission.

CS 280 (was CIS 284) 5 cr

### Advanced Data Structures

Offers a detailed study of advanced data structures, including the analysis of algorithms and object-oriented programming using the programming language C++.

*Prerequisite:* CS 270 (was CIS 280) or instructor permission.

CS 281 (was CIS 282) 5 cr

### Digital Design

Provides an introduction to the design and implementation of combinational and sequential digital circuits and systems.

*Prerequisite:* MATH 112 and CS 270 (was CIS 280).

CS 282 (was CIS 283) 5 cr

### Microprocessors

Offers an introduction to the architecture of microprocessors and assembly language programming.

*Prerequisite:* MATH 112, CS 270 (was CIS 280), and CS 281 (was CIS 282).

CS 285 (was CIS 235) 5 cr

### Programming Tools

Covers tools and techniques which facilitate programming and debugging, including debuggers, profilers, scripting, and C and C++ programming under the Linux operating systems.

*Prerequisite:* CS 270 (was CIS 280).

## Cooperative Education

288 1–4 cr

### Cooperative Work Experience

In partnership with you, your instructor, and your employer, you will develop learning objectives to apply theories, concepts, and methods studied in the classroom to a practical work environment for your field of study.

*Prerequisite:* Complete 9 credits of your program required courses, with at least a 2.0 GPA.

289 1 cr

### Cooperative Classroom Seminar

The classroom seminar option complements your Cooperative Work Experience (288) and helps you to prepare for future employment. You will prepare for job interviews, write an effective resume, learn job search skills and build your employment portfolio.

289 1 cr

### Cooperative Independent Seminar

The Independent seminar focuses on work-related topics and you will write a research paper to complement your work experience. This seminar option is more flexible for students with a full class schedule.

## Criminal Justice (CJ) (was Administration of Justice - ADMJ)

CJ 100 ( was ADMJ 100) 15 cr

### Basic Law Enforcement

Addresses criminal law, evidence, administration of justice, investigation, patrol, traffic, and juvenile procedures. This 16-week course, containing 450 hours of instruction, is designed to meet the standards of the Washington Law Enforcement Officers Training Commission basic school for newly employed officers. This course is open only to active law enforcement officers.

CJ& 101 (was ADMJ 186) 5 cr

### Introduction to Criminal Justice

Introduces and provides an overview of the various agencies involved in the administration of criminal justice, including local, state, and federal agencies as well as a history of police and corrections. Students will study how our criminal justice system evolved and how it functions, examined from the perspective of the Constitution through the criminalization process of investigation, arrest, trial, and post-trial procedures.

CJ& 110 (was ADMJ 182) 5 cr

### Criminal Law

Focuses on an explanation of criminal law principles including a discussion of crimes against person and property.

CJ 154 (was ADMJ 154) 5 cr

### The American Legal System

Introduces students to the philosophy of our legal system as well as how the various actors within the system interrelate.

CJ 181 (was ADMJ 181) 3 cr

### Report Writing for Law Enforcement

Prepares students interested in law enforcement to write effective and concise police reports. Strong emphasis is placed on observation, note taking, and narrative skills.



**CJ 183 (was ADMJ 183) 5 cr**  
**The Administration of Justice**  
 Studies criminal justice in the State of Washington, including analysis of the laws of arrest, search and seizure, grand jury proceedings, extraditing, pretrial procedures, conduct of criminal trials, rights of the accused, motions, appeals, probation, and parole. The course includes organization and jurisdiction of the Federal Court System and a study of U.S. Supreme Court decisions affecting law enforcement.

**CJ 260 (was ADMJ 260) 5 cr**  
**Physical Evidence and Criminalistics**  
 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.

**CJ 286 (was ADMJ 286) 5 cr**  
**Criminal Law Administration**  
 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.

## Diesel/Heavy Equipment Technology (ADT)

**ADT 100 5 cr**  
**Essentials of Mechanics**  
 Develops beginning mechanical skills and knowledge essential to successful completion of the automotive and/or diesel technology program. Includes shop safety, fasteners, measurements, cutting tools, lifting, tool usage, shop orientation, manuals (including computer retrieval systems), bearings and seals, and special emphasis on preventive/predictive maintenance.

**ADT 101 5 cr**  
**Electrical Systems I**  
 Covers the theory of electricity from fundamentals through solid state. Includes Ohm's Law, series, parallel, and series-parallel circuits. Automotive wiring and circuits will be included as well as how to read wiring diagrams and circuit tracing and repair.

**ADT 102 10 cr**  
**Electrical Systems 2**  
 Presents brief review of the theory of electricity. Covers theory, diagnosis and repair of low voltage systems (12V), including batteries, starting systems, charging systems, instrumentation and warning devices, lighting systems, power accessories, (e.g. power

windows, power seats), and computer operation and circuit analysis. Also covered are high voltage energy, distributorless and breaker point ignition systems.  
*Prerequisite:* ADT 101 or instructor permission.

**ADT 104 6 cr**  
**Vehicle Climate Control**  
 Studies the theory of operation, design, diagnosis and repair of both manual and automatic heating/air conditioning systems used in automobiles and truck/heavy equipment applications. This is a second year course.

**ADT 111 5 cr**  
**Hydraulic Brakes**  
 Covers the theory of hydraulics, fundamentals of manual, power, drum, and disc brake systems.

**ADT 200 5 cr**  
**Internship**  
 Provides paid or unpaid work experience in the discipline (Automotive or Diesel) that the student is majoring in. The class will give the students hands-on experience to familiarize them with work in an industrial setting.  
*Prerequisite:* 36 credits or more of ADT courses or instructor permission.

**ADT 205 5 cr**  
**Hydraulics I**  
 Studies the basic principles, operation, and maintenance of mobile hydraulic systems. Fluids, filters, and fluid conductors shall also be discussed.

**ADT 206 10 cr**  
**Heavy Duty Power Trains**  
 Provides study of the principles of operation, maintenance, problem diagnosis, and repair of clutch systems, manual transmission, automatic transmission, power take-off, transfer cases, drivelines, differential assemblies and final drives used in trucks and heavy equipment.

**ADT 207 10 cr**  
**Heavy Duty Chassis Maintenance**  
 Offers training in the repair, maintenance, and diagnosis of heavy equipment frames, steering and suspension, brakes and clutches, and drivelines.

**ADT 210 5 cr**  
**Hydraulics II**  
 Provides a more in-depth look at hydraulic pumps, valves, and actuators in mobile hydraulic systems. Emphasizes testing and diagnosis of hydraulic circuits.  
*Prerequisite:* ADT 205 or instructor permission.



**ADT 223** 16 cr

### Diesel Engine Rebuild

Studies the operation, maintenance, repair, and overhaul of diesel engines used in heavy equipment.

*Prerequisite:* ADT 100.

**ADT 226** 15 cr

### Heavy Duty Engine Performance

Studies factors and components that affect diesel engine performance, fuel economy, and exhaust emissions. Includes fuel system and valve train problem diagnosis, maintenance, repair, and adjustment.

*Prerequisite:* ADT 102 or instructor permission.

**ADT 228** 2 cr

### Truck Driving for Technicians

Prepares second-year Diesel students to pass Washington State CDL tests (written and driving) using a combination of classroom and driving time. This class is not intended to prepare students for a career in truck driving. Rather, it prepares diesel technology students to test drive and relocate commercial vehicles.

*Prerequisite:* ADT 102, 205, 210, or instructor permission.

## Drafting (DRFT)

**DRFT 107** 1-3 cr

### Technical Graphics

Involves students in the use of techniques and standard practices of technical graphics so that design ideas can be adequately communicated and produced. Includes free-hand sketching, use of drafting instruments, line work, lettering, orthogonal projections, pictorials, basic dimensioning, and an introduction to computer-aided design drafting.

**DRFT 151** 1-3 cr

### Introduction to Computer-Aided Drafting (CAD)

Introduces drafting operations as applied to computer aided drafting (CAD) and the commands and procedures used to create, edit, and plot two-dimensional CAD drawings. Drawing productivity, accuracy, and organizational techniques are emphasized in this course. Assignments will be chosen from various drafting disciplines.

*Prerequisite:* CS 110 (was CIS 110) or instructor permission.

**DRFT 210** 1-3 cr

### Advanced Technical Graphics

Involves students in the use of techniques and standard practices of technical graphics towards the solution of technical design problems, and to communicate and produce design ideas. Includes dimensioning and tolerancing, production of working drawings,

and advanced computer-aided design drawing. This course also introduces students to electronic, piping, and welding drawings.

*Prerequisite:* DRFT 107 either/or ENGR& 121 (was ENGR 111).

**DRFT 252** 1-3 cr

### 3-D Computer Aided Drafting

Involves students in the use of parametric solid modeling towards design on three-dimensional part and assembly models. Includes creating part and assembly drawings from 3D models, modifications throughout the design process, and comparing the many parametric solid modeling software packages available.

*Prerequisite:* DRFT 210.

**DRFT 260** 3 cr

### Survey of Civil and Architectural Graphics

A survey course that introduces the student to 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 either/or ENGR& 121 (was ENGR 111) or instructor permission.

## Drama (DRMA)

(was DRAM)

**DRMA& 101 (was DRAM 100)** 5 cr

### Introduction to Theatre

**H**

Focuses on how drama reflects and shapes community attitudes. The course looks at the historical developments of theatre in both western and non-western cultures. Particular attention is given to how the theatre through the written play and the visual presentation of a play shapes our perceptions, reflects biases or challenges our American perception of the world. Students read plays from representative world cultures, write papers and discuss them in seminar. The Center Stage production for the quarter focuses on a single play and uses the acting, directing, producing, designing, historical and social context to illustrate the complex nature of taking a play from the printed page to the stage. The student writes a critical paper on the production, discusses it in seminar and writes a review on the production values and the contextual content of the play.

**DRMA 106, 107, 108** 5 cr

### Introduction to Acting

**H, P**

Provides practical participatory approach involving movement for the stage, voice production, improvisations, and scene work. Group work is stressed to free each person to be comfortable in interactions with other people. Students are not required to be in the current Center Stage production. No prior acting is required.



**DRMA 116, 117, 118**

5 cr

**Stage Crafts**

Explores the technical areas involved in producing a play from design to construction to finished production by lecture and practical application of skills in selected technical fields. Practical experience is gained in sets, costumes, lights, and by serving on stage crew for the current Center Stage production.

**DRMA 121**

5 cr

**Introduction to Costume Design**

Covers beginning design concepts from a historical perspective. Includes costume history, design, and sewing techniques. Experience is gained through construction, fitting, and final alteration of costumes for the current Center Stage production. No prior experience is necessary.

**DRMA 196, 197, 198, 296, 297, 298**

1-5 cr

**Rehearsal and Performance**

Offers credit and experience to students who participate in the Center Stage production for the quarter. This includes actors, directors, designers, technicians, and support personnel. Students must successfully complete the rehearsal process through the final performance.

**DRMA 206, 207, 208**

5 cr

**Acting**

Emphasizes development and application of basic 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.

*Prerequisite:* DRMA 106, 107, or 108, or instructor permission.

**DRMA 210**

5 cr

**Masks**

Introduces masks as a tool 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 body awareness, and develop outward expressions through physicalization, improvisation and scene work.

**DRMA 215C**

5 cr

**Masks of the World**

Studies how masks are used in various societies. The application of the neutral mask leads to character masks and cultural masks. Explores the duality of mask and actor and the relationship that exists between them. The mask creates forms that reflect our culture. Seminar discusses art, theatre and cultural aspects of mask and the interrelationships that exist in individual societies. Student actors must have had at least three major roles in Center Stage productions, audition for and get a role in, and complete the current production. This is a Capstone course. See Capstone prerequisites on page 31.

**DRMA 255C**

5 cr

**Theatre Project**

Studies production style, history, playwrights, character analysis, motivation, relationships and external influences upon playwrights and the plays they write. Students participate in the current Center Stage production, either as an actor or in a technical capacity, applying an understanding of the interrelationships of art, drama, history, and psychology to the play. The current production determines course emphasis. Student actors who take the course must have had major roles in at least three Center Stage productions, and must audition for and be cast in the current production. Students in artistic and technical areas must have the instructor's permission. All students must participate in and complete the current Center Stage production. This is a Capstone course. See Capstone prerequisites on page 31.

**Early Childhood Education (ECED)**

**APPED 090**

1 cr

**Introduction to Apprenticeship**

Introduces beginning apprentices to apprenticeship training, state requirements, apprentice responsibilities, and various training and educational options.

**ECED 102**

1 cr

**Building Bridges Early Childhood Guidance**

Provides information and training regarding child guidance techniques. Course includes two 5-hour seminars and weekly site assistance from trained mentors in the field of early childhood education.

*Prerequisite:* Instructor permission required.

**ECED 105**

2 cr

**Caring for Infants and Toddlers**

Provides an opportunity to analyze and apply developmentally appropriate practices for infants/toddlers. Introduces basic infant/toddler practices in the following competency areas: infant/toddler growth, development and learning, social emotional development, safety and health, learning environments, guidance techniques, and language/communication.

**ECED 109**

3 cr

**Literature and Language Development for Young Children**

Provides an understanding and working knowledge of methods to foster language development in young children. Examines the development of language and communication skills, selection and presentation of appropriate young children's literature and language art activities, and intervention and evaluation of children's communication skills.



**ECED 110** 2 cr**Basics of Childcare**

Provides a 20-hour guidebook that meets the Washington State Training and Registry System (STARS) essential foundations for childcare. Designed to meet basic training outcomes for personnel in early childhood and school-age childcare centers as mandated by the Washington State Legislature and outlined by Washington State Training and Registry System.

**ECED 115** 3 cr**Health, Safety and Nutrition for Young Children**

Prepares the student in identifying basic nutritional, safety, and health needs of the young child, and explores developmentally appropriate methods to teach and encourage nutrition, health, and safety in the early childhood setting.

**ECED 119** 3 cr**Guidance Techniques for Young Children**

Provides practical application and knowledge of positive discipline techniques. This course will put theory into action through role-play and lecture.

*Prerequisite:* EDUC& 114 (was ECED 114) or instructor permission.

**ECED 126** 3 cr  
**Practicum 1**

Introduces basic classroom skills for preschool teachers and integrates current early childhood developmental theory/practice with the practicum experience. Students will complete an initial assessment of present teaching skills and establish objectives for increasing the basic competencies required of persons with primary responsibility for groups of young children ages 2 to 6. Development of teaching skills will be accomplished in an early childhood classroom setting. Students will be observed by the instructor and meet with the instructor in weekly seminar sessions.

**ECED 127** 3 cr**Practicum II**

Integrates the practicum experience with developmentally appropriate early childhood observation techniques. Designed to increase objectivity and skill in recording the behavior of young children. Students are required to work in an early childhood setting and to plan and implement appropriate activities to facilitate observation and recording of behavior. Students will be observed by the instructor and meet with the instructor in weekly seminar sessions.

*Prerequisite:* ECED 126 with a grade of C or better or instructor permission.

**ECED 128** 3 cr  
**Practicum III**

Refines and extends skills acquired in Practicum I and II and continues to develop competencies required of persons with primary

responsibility for groups of young children. Skills are practiced in an early childhood setting. Students also meet with the instructor in weekly seminar sessions.

*Prerequisite:* ECED 126 and 127 with a grade of C or better or instructor permission.

**ECED 130** 3 cr  
**Introduction to Early Childhood Education**

Provides a general overview of early childhood education; explores various styles and child development theories; and presents an interpersonal, experiential approach to understanding how people's values, life experiences and perceptions influence interactions with children. Emphasis is directed toward developmentally appropriate practices, communication skills, discipline techniques, and building self-esteem.

**ECED 204** 3 cr  
**Music and Movement for Young Children**

Provides ideas for creating movement and music programs appropriate for young children. The course emphasizes singing, movement, appropriate records, rhythm instruments, and other related media for creative activities throughout the day. Provides instruction on perceptual motor skills designed for young children.

**ECED 205** 3 cr  
**Management and Operations of Early Childhood Centers**

Studies principles and management of day-care centers. Emphasis is on laws and regulations for childcare centers and programs, including facilities, equipment, and materials, program planning, scheduling, staffing, and record keeping.

*Prerequisite:* ENGL& 101 (was ENGL 101) and all ECED 100 level courses and EDUC& 114 (was ECED 114) with a grade of C or better, or instructor permission.

**ECED 209** 1 cr  
**Early Childhood Mentor Development**

Provides an overview of the phases of the mentor coach process. Includes instruction in the techniques of reflective practice, the benefits for the mentor partners, and the setting of goals and objectives which align with personal and organization values.

*Prerequisite:* Instructor permission required.

**ECED 215** 3 cr  
**Early Childhood Curriculum Development**

Offers students the opportunity to secure a basic knowledge of curriculum development, examining various curriculum models. Emphasis is on selection of appropriate curriculum and implementation of that curriculum.

*Prerequisite:* ECED 130.



**ECED 216** **3 cr**  
**Family Systems**  
 Provides skills and knowledge that family support personnel need to build on family strengths, help families deal with the increasing stress of family life, understand and respect cultural diversity and family lifestyles.

**ECED 219** **3 cr**  
**Math, Science and Computers in Early Childhood**  
 Designed to provide a working knowledge and understanding of math, science and computer concepts, developmentally appropriate activities and sequencing for the individual child as well as group experiences.

**ECED 220** **3 cr**  
**Arts and crafts for Young Children**  
 Prepares students to present a developmentally appropriate creative art program to young children. Class will cover child developmental growth and the exploration of art process through media and materials.

**ECED 260** **1-9 cr**  
**Practicum IV**  
 Offers the opportunity for students to gradually assume the role of head teacher with a group of young children. Students plan the curriculum, attend parent meetings, coordinate staff responsibilities, and attend agency staff meetings. Students meet individually with the instructor to assess their program.  
*Prerequisite:* ENGL& 101 (was ENGL 101) and all ECED 100-level courses and EDUC& 114 (was ECED 114) completed with a grade of C or better.

## Earth Science (ERSI)

**ERSI 104** **5 cr**  
**Introduction to Earth Sciences** **NSL**  
 Provides a comprehensive picture of Earth and its unique place in the universe by examining major concepts from geology, oceanography, meteorology, and astronomy. Topics include Earth-Sun relationships, plate tectonics, rock cycle, evolution of stars, composition and structure of atmosphere, hydrosphere, and lithosphere, characteristics of oceans, solar systems, and stars.

**ERSI 105** **5 cr**  
**Earth Systems** **NS**  
 Presents a holistic view of Earth (our environment) as a system with emphasis on understanding the relationships of humans, atmosphere, hydrosphere, solid Earth, and biosphere. Major concepts are drawn from astronomy, meteorology, oceanography, geography, geology, biology, and ecology. Man's part in the global ecosystem is analyzed, as is our dependence on natural resources.

**ERSI 165** **3 cr**  
**Wilderness Experience**  
 Presents concepts and techniques of basic hiking and camping in back country environment. Includes a multi-day back country experience.

## Economics (ECON)

**ECON 105** **5 cr**  
**Introduction to Economics** **SS**  
 Introduction to basic principles of macro and micro economics for the non-major. This course introduces the market and pricing system, the economics of the firm, the distribution of wealth and income, the institutional aspects of distribution, and international trade and monetary transaction, as well as the concepts of national wealth, operation of the United States economy, factors of production, and distribution of wealth. Additionally, this course discusses critical economic thought and its history.

**ECON& 201** (was ECON 205 and ECON 207) **5 cr**  
**Micro Economics** **SS**  
 (was titled Principles of Microeconomics)  
 Studies the market and pricing system, the economics of the firm, the distribution of wealth and income, the institutional aspects of distribution, and international trade and monetary transaction.  
*Prerequisite:* MATH 092 or BUS 104 (was BSAD 104) and ENGL& 101 (was ENGL 101) or BUS 119 (was BSAD 190).

**ECON& 202** (was ECON 206) **5 cr**  
**Macro Economics** **SS**  
 (was titled Principles of Macroeconomics)  
 Introduces concepts of national wealth, operation of the United States economy, factors of production, and distribution of wealth. Emphasis is on measurement and composition of national income and factors that affect its fluctuation.  
*Prerequisite:* ECON& 201 (was ECON 205) with a grade of C or better.

**ECON 208C** **5 cr**  
**International Economics** **SS**  
 Surveys the theoretical approach to the study of international trade, its effects upon national economies, motivations to trade, and gains to be made from national and regional specialization and trade. International financial institutions and their role in influencing the values of national currencies, national policies encouraging or discouraging free trade, and the role of the Pacific Northwest in international trade are considered. This is a Capstone course. See Capstone prerequisites on page 31.



## Education (EDUC)

**APPED 090** 1 cr

### Introduction to Apprenticeship

Introduces beginning apprentices to apprenticeship training, state requirements, apprentice responsibilities, and various training and educational options.

**EDUC 100H** 5 cr

### Leadership in Learning-Honors

Provides a seminar and experiential environment in which students develop a personal philosophy, articulate a vision, make decisions and lead with goals, apply ethics to leadership, manage conflict, build a team, initiate change, and lead by serving. The course is humanities based with core readings from great works of literature, history, philosophy, and films.

*Prerequisite:* Acceptance into the Honors Program.

**EDUC 109** 1 cr

### Learning Styles and Multiple Intelligences

Provides an introductory study of learning styles and Howard Gardner's theory of multiple intelligences.

**EDUC& 114 (was ECED 114)** 3 cr

### Child Development

Provides an in-depth study of the physical, emotional, social and mental development of children from conception through eight years of age. Emphasis will be placed on the application of information to childcare practices.

**EDUC 115** 3 cr

### Education and the Law

Surveys the legal, health, and safety issues as they pertain to the rights and responsibilities of teachers and students within the school setting, including safety in the workplace. Other topics include child abuse and neglect laws, reporting procedures, the Code of Ethics, ADA, contracts, tenure, dismissal procedures, and academic freedom.

*Prerequisite:* ENGL& 101 (was ENGL 101) with a grade of C or better.

**EDUC 119 (was EDUC 114)** 2 cr

### Curriculum and Instruction

Investigates learning theories and their relationship to the curriculum design process, course development, implementation, and evaluation. Focus is placed on gaining a working understanding of the State Learning Goals and Essential Academic Learning Requirements.

**EDUC& 203 (was ECED 210)** 3 cr

### Exceptional Child

(was titled Young Children with Special Needs)

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.

*Prerequisite:* ECED 130 or EDUC& 205 (was EDUC 110) or instructor permission.

**EDUC 204** 3 cr

### Community College Teaching

Provides a comprehensive overview of professional/technical teaching in the community college. Specific topics include common teaching strategies, syllabus development, selection of course materials, assessment and grading, and the use of technology in the classroom. Lectures, discussions, class simulations, goal setting and self-assessment are included.

**EDUC& 205 (was EDUC 110)** 5 cr

### Intro to Education w/Field Experience

(was titled Introduction to Education)

Introduces the field of education, and is designed to serve the needs of those considering a career or those interested in a better understanding of the educational system. This course will integrate readings, lectures, discussions, written assignments, student presentations, guest speakers, and observation and participation in actual elementary classrooms to provide students with a broad survey of teaching in today's schools. Meets the associate's degree cultural diversity requirement.

**EDUC 206 (was EDUC 205)** 3 cr

### Course Organization and Curriculum Development

Provides a comprehensive training for professional/technical teaching in the community college in designing college courses appropriate for specific certificate or degree programs. Includes an overview of learning styles, program and unit outcomes, competencies, vision and mission, and assessment techniques. Also covers the processes of proposing new or revised curricula.

**EDUC 209** 3 cr

### Occupational Analysis

Provides occupation-oriented research techniques, strategies, and training to assist professional/technical faculty at the community college in the process of helping their students to meet specific occupational requirements. Includes an overview of job availability, current job openings, present and future labor demands, and salary ranges by geographic area.



**EDUC 214** 3 cr  
**Instructional Strategies**  
 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.

**EDUC 215** 3 cr  
**Classroom Management**  
 Provides pre-service teachers the necessary skills to observe and manage all aspects of the classroom. Topics include discipline, student evaluations, record keeping, grouping strategies, classroom environments, safety in the classroom, and application of "best practices" curriculum.

## Engineering (ENGR)

**ENGR 106 (was ENGR 121)** 5 cr  
**Engineering Problems**  
 Introduces engineering, emphasizing analysis of actual engineering problems at the mathematical and reasoning levels of introductory students. Within this analytical framework, tools and concepts such as measurement theory, error analysis, dimensional analysis, metric units, systems of modeling, engineering design, and principles of elementary physics are incorporated.

*Prerequisite:* High school or 100-level physics or chemistry, or instructor permission.

**ENGR& 121 (was ENGR 111)** 1-3 cr  
**Engineering Graphics I**  
 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.

**ENGR& 122 (was ENGR 112)** 1-3 cr  
**Engineering Graphics II**  
 Involves students in the use of graphical techniques and practices applied towards engineering design and analysis. Includes dimensioning and tolerancing, descriptive geometry, production of working drawings, advanced computer-aided design modeling, and an introduction to parametric solid modeling.

*Prerequisite:* ENGR& 121 (was ENGR 111) or instructor permission.

**ENGR& 123 (was ENGR 113)** 1-3 cr  
**Engineering Graphics III**  
 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 (was ENGR 215)** 5 cr  
**Electrical Circuits**  
 (was titled Electrical Engineering Science I: Circuits)  
 Provides for student 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 simple differential equations associated with basic circuit forms.

*Prerequisite:* PHYS 252, MATH& 153, and computer literacy.

**ENGR 210** 5 cr  
**The 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. This course is cross-listed with ENVS 210. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* Algebraic, writing, and presentation skills; a previous distribution science course (e.g., PHYS& 100) would be helpful.

**ENGR& 214 (was ENGR 122)** 5 cr  
**Statics**  
 Engages student use of vector algebra and the sweeping power of a few fundamental principles to design real engineering solutions to problems involving discrete and distributed forces, resultants, equations of equilibrium, moments about points and lines, centroids, moments of inertia, and the principle of virtual work.

*Prerequisite:* ENGR 106 (was ENGR 121), MATH& 151, or instructor permission.

**ENGR& 215 (was ENGR 261)** 5 cr  
**Dynamics**  
 Engages student application of vector algebra and the sweeping power of a few fundamental principles to design real engineering solutions to problems involving translational and rotational motion associated with kinematics, kinetics, the impulse-momentum and work-energy principles, and related topics.

*Prerequisite:* ENGR& 214 (was ENGR 122), MATH& 152, and PHYS 251, or instructor permission.



**ENGR& 224 (was ENGR 260)** 5 cr

**Thermodynamics**

(was titled Engineering Thermodynamics)

Encourages student application of basic principles of macroscopic thermodynamics to design solutions to engineering problems involving energy transformations and state changes, the first and second principles of thermodynamics, macroscopic properties of substances, flow analysis, entropy, equations of state, power and refrigeration cycles, and thermodynamic relations.

*Prerequisite:* ENGR& 214 (was ENGR 122), PHYS 251, and MATH& 152 or instructor permission.

**ENGR& 225 (was ENGR 254)** 5 cr

**Mechanics of Materials**

Engages students in application of fundamental principles and concepts of stress, strain and their relationships to design engineering solutions associated with axial loads, torsion and bending, combined stresses, properties of materials, columns, and repeated loadings.

*Prerequisite:* ENGR& 214 (was ENGR 122), concurrent enrollment in MATH& 152 and PHYS 252, or instructor permission.

## English (ENGL)

**ENGL 100** 5 cr

**English Fundamentals**

Introduces college-level writing skills, such as selecting a topic, generating and organizing ideas, revising, editing, and proofreading. Students needing additional preparation in writing skills may enroll in this class before ENGL& 101.

**ENGL& 101 (was ENGL 101)** 5 cr

**English Composition I**

Part One of the composition sequence. Introduces first-year college writing skills including thesis discovery, development, support and documentation, organization, sentence correctness, diction, style, and final editing. Assignments might include and integrate exposition, narration, argumentation and response. Emphasizes analytical reading and introduces formal documentation.

*Prerequisite:* College-level writing skills or completion of ENGL 100 with a grade of C or better.

**ENGL 102** 5 cr

**English Composition** **HA**

Part Two of the composition sequence. Practices and develops first-year college writing skills by emphasizing theme, argumentation, analysis, integration and documentation of evidence as part of a formal research paper, sentence correctness, diction, and style.

*Prerequisite:* ENGL& 101 with a grade of C or better.

**ENGL 110** 5 cr

**Industrial Communication**

Offers practical, job-related study of written and interpersonal communications. Writing includes resumes, memos, work orders, and short reports. Interpersonal communications involve active listening, as well as paraphrasing, perception checking, and group problem solving.

**ENGL 124, 125, 126, 224, 225, 226** 2 cr

**Arts Magazine Publication** **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 161** 3 cr

**Speed Reading**

Helps develop flexibility, versatility, speed of comprehension, and vocabulary acquisition skills. The emphasis is on developing good reading habits and adaptability to different types of materials.

**ENGL 204** 5 cr

**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

**ENGL 205** 5 cr

**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL 231** 5 cr

**Creative Writing** **H**

Provides an introduction to the writing of short fiction and poetry. Assignments explore techniques of writing and revising, examining the elements of stories and poems. Students critique each other's work and study the published work of other writers.

*Prerequisite:* ENGL& 101 or instructor permission.



**ENGL 232** **5 cr**  
**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** **5 cr**  
**Creative Writing** **H**  
 Engages students in writing and revising short fiction and poetry. Students may choose to concentrate on stories or poems in individual projects. In class sessions, students critique each other's work and study the published work of other writers.

*Prerequisite:* ENGL& 101, 231, and 232 or instructor permission.

**ENGL 234** **5 cr**  
**Creative Writing: Nonfiction** **H**  
 Emphasizes the writing, constructive analysis, and revision of creative nonfiction, focusing on the personal essay and "New Journalism." Briefly examines the history of the forms and studies exemplary published works. Students use journaling and respond to other exercises to develop ideas from personal experience, write and revise essays, and critique one another's work.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL& 235 (was ENGL 220/ENGR 220)** **5 cr**  
**Technical Writing** **H**  
 (was titled Technical and Workplace Writing)  
 Emphasizes written workplace communications, designed especially for the CIS, engineering, and science professions. Topics covered include document format, visual design, multi-tiered audience, formal and informal reports, instructions, letters and memos.

*Prerequisite:* ENGL& 101 with a grade of C or better.

**ENGL 239C (was ENGL 235C)** **5 cr**  
**Creative Writing** **H**  
 Provides guidance in the writing and revising of individual projects in poetry, fiction, or personal nonfiction. Explores connections with the work of published writers in the same form or genre. Students critique each other's work and complement their creative projects with a research paper. This is a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL 231 or instructor permission.

**ENGL 240** **5 cr**  
**American Literature** **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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL 245** **5 cr**  
**Contemporary Literature** **H**  
 Explores contemporary films, drama, poetry, and fiction using analysis, interpretation, and evaluation. Field trips to view a movie or a play, or attendance at a poetry reading may be included. Essays and other written work are required. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Students will participate in seminars building to a researched term paper. Meets the associate's degree cultural diversity requirement.

*Prerequisite:* ENGL& 101.

**ENGL 251** **5 cr**  
**English Literature** **H**  
 Surveys major authors from Beowulf, Chaucer, Shakespeare, Donne, Johnson, and Milton through 18th Century authors including Swift, Pope, and Fielding. Seminar-discussion format.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL 252** **5 cr**  
**English Literature** **H**  
 Surveys major authors from Blake and Wordsworth among other Romantic writers, Tennyson and Browning among other Victorian writers, and poets and prose writers of the 20th century, including Conrad, Yeats, Joyce, Lawrence, Eliot, Becket, and Auden. The course is operated in a seminar-discussion format. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL 254** **5 cr**  
**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENGL 256** **5 cr**  
**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101 or instructor permission.



**ENGL 260****World Literature**

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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL 102 or instructor permission.

5 cr  
H**ENL 081, 082, 083, 084****Writing & Grammar (Levels I-4)**

Provides practice in writing improvement of sentences, paragraphs, and essays. Develops writing skills for everyday uses as well as for academic purposes. Focuses on use of the writing process, correct sentence structure, and grammar rules within the context of writing assignments. Introduces the culture of the American classroom.

*Prerequisite:* Instructor permission.

1-5 cr

**ENGL 270****Literature for Children**

Offers a critical survey of literary materials appropriate for children from nursery through elementary school age with practice in using literature with groups. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

5 cr  
H**ENL 099****Selected Topics in English as a Non-Native Language**

Provides opportunities for the study of a variety of 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; guided study for TOEFL preparation; or as a bridge support for students entering their first college-level classes.

*Prerequisite:* Instructor permission.

1-5 cr

## English as a Non-Native Language (ENL)

**ENL 051, 052, 053, 054****Listening (Levels I-IV)**

Provides practice in listening to everyday conversation and dialogs, authentic sources of media, and expository passages and lectures. Builds ability to aurally understand pre-taught vocabulary in context, reduced speech and idiomatic expressions. Moves from listening to simple statements and questions to longer passages. Introduces culture of the American classroom.

*Prerequisite:* Instructor permission or successful completion of the previous level.

1-5 cr

## English as a Second Language (ESL)

**ESL 001-006****Guided Workshop for ESL Levels I-IV**

Practices vocabulary introduced in ESL Levels I-IV. Emphasis is on small group and one-on-one work. Concurrent enrollment in ESL 011, 012, 013, 014, 015 or 016 required.

*Prerequisite:* Appropriate CASAS score.

1-10 cr

**ENL 061, 062, 063, 064****Speaking (Levels I-IV)**

Provides practice in speaking American Standard English, including practice in discrimination and production of vowel and consonant sounds, word stress, and sentence intonation and rhythm. Stresses production of comprehensive English in both informal and formal settings. Introduces culture of the American classroom.

*Prerequisite:* Instructor permission or successful completion of the previous level.

1-5 cr

**ESL 011****ESL-Level I (Beginning ESL Literacy)**

Introduces basic vocabulary to enable a limited English-proficient adult to understand frequently used words and very simple, slowly spoken phrases, including awareness of non-verbal communications, and very basic computer skills.

*Prerequisite:* Appropriate CASAS score.

1-10 cr

**ENL 071, 072, 073, 074****Reading (Levels I-IV)**

Provides practice in reading improvement for both everyday use and academic purposes. Focuses on development of vocabulary, comprehension, effective reading strategies, and reading speed. Introduces the culture of the American classroom.

*Prerequisite:* Instructor permission or successful completion of the previous level.

1-5 cr

**ESL 012****ESL-Level II (Beginning ESL)**

Introduces additional vocabulary to enable a limited English-proficient adult to listen actively and respond to verbal and non-verbal communication, to express basic survival needs, and participate in some routine social conversations. Provides instruction in using simple computer programs to perform routine tasks.

*Prerequisite:* Appropriate CASAS score.

1-10 cr



**ESL 013** 1-10 cr  
**ESL-Level III (Low Intermediate ESL)**  
 Continues work in oral and written English from ESL 012 to enable students to respond appropriately to verbal and non-verbal communication, read and understand material about familiar subjects, write and edit simple paragraphs, set goals, and use basic computer software such as word processing.

*Prerequisite:* Appropriate CASAS score.

**ESL 014** 1-10 cr  
**ESL-Level IV (High Intermediate ESL)**  
 Provides instruction to enable a limited English-proficient adult to understand descriptive and spoken narrative; to request, clarify and confirm basic information; to state and explain own opinions; to write short essays on familiar topics; and to set goals and work with most basic computer software.

*Prerequisite:* Appropriate CASAS score.

**ESL 015** 1-10 cr  
**ESL-Level V (Low Advanced ESL)**  
 Provides instruction to enable a limited English-proficient adult to participate effectively and independently in conversations on everyday survival, work and social situations. Also to read and understand real-life materials on everyday subjects, write multi-paragraph essays, and use common computer software.

*Prerequisite:* Appropriate CASAS score.

**ESL 016** 1-10 cr  
**ESL-Level VI (High Advanced ESL)**  
 Provides instruction to enable a non-native speaker to participate effectively and independently in conversations, with emphasis on grammar, word choice, register, pace, and gesture. Also to read and understand most materials, convey ideas in writing, and confidently use word processing.

*Prerequisite:* Appropriate CASAS score.

## Environmental Studies (ENVS)

**ENVS 110** 2 cr  
**Intertidal Ecology & Wilderness Experience**  
 Provides a wilderness backpack camping experience and an ecological study of the rich community of life forms that occupy the rocky coastline between the low and high tide marks.

**ENVS 120** 3 cr  
**Natural History and Environment** NS  
 Draws from the rich spectrum of American nature and environmental literature from colonial times to the present to illustrate the scientific method, principles of ecology, and the human position in the natural world.

*Prerequisite:* ENGL& 101 or instructor permission.

**ENVS 130** 3 cr  
**Study Abroad: Tropical Ecosystems** NSL  
 Explores the ecology and diversity in the Costa Rican rainforest or the Belize barrier reef, second largest in the world. Teaches principles of ecology as they reflect upon this still largely unspoiled reef, home of a diverse array of colorful marine organisms.

**ENVS 150** 5 cr  
**Environment and Society** NS  
 An introduction to the interdisciplinary field of environmental science based on major concepts from the biological, physical, and social sciences. Students examine the connection between the natural world and its inhabitants, especially humans. Emphasis is on environmental problems, including their impact on human societies, and possible solutions. Major topics covered are ecosystems, natural resources, pollutants, population, climate change, consumption, conservation and resource management, and environmental ethics. Local to global issues will be discussed. Meets the associate's degree cultural diversity requirement.

**ENVS 200** 5 cr  
**Environmental Conservation** NS  
 Provides an introduction to the interdisciplinary field of environmental science based on major concepts from the physical, biological, and social sciences, including political science and economics. Examines the interrelationships between the environment and its inhabitants, including humans. Major topics covered are ecosystems, natural resources, pollution and other wastes, population, consumption, history of conservation and resource management, and environmental ethics, issues, and information. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* Any college level natural science course recommended.

**ENVS 210** 5 cr  
**The 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. This course is cross-listed with ENVS 210 and ENGR 210. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* Algebraic, writing, and presentation skills; a previous distribution science course (e.g., PHYS 100) would be helpful.



## Fire Science (FISC)

**FISC 101** 3 cr

### Introduction to Fire Protection

Studies the history and development of fire service as well as safety and security movements. Identifies general fire hazards and their causes and how to apply fire protection principles.

**FISC 105** 3 cr

### Fundamentals of Fire Prevention

Studies fundamentals of fire inspection standards and techniques of evaluation, identification of hazards, and making practical recommendations. Students write reports and conduct on-site building inspections to locate hazards and recommend improvements. Students study fire prevention and education programs and conduct presentations.

**FISC 109** 3 cr

### Fire Service Safety

Studies firefighter health and safety as it relates to Washington State. Emphasizes day-to-day health and safety of department members. Addresses standards and regulations, the safety officer's role, accident prevention and investigation, record keeping. Structural, EMS, hazardous materials, and wild land emergencies will be addressed.

**FISC 110** 3 cr

### Fire Science I

Studies characteristics and behavior of fire, fundamental physical laws and chemical reactions occurring in fire and fire suppression. Analyzes factors contributing to fire—its cause, rate of burning, heat generation and travel, by-products of combustion, fire confinement, control, and extinguishing.

**FISC 111** 10 cr

### Basic Fire Fighting Skills

Studies basic tools, procedures, techniques and safety precautions utilized by the fire fighter during fire ground operations based on nationally recognized professional standards and Washington State "basic fire fighter" training requirements.

**FISC 112** 5 cr

### Intermediate Fire Fighting Skills

Continues to develop basic fire fighting skills learned in FISC 111, in creating technical knowledge of ground operations. Emphasis is placed on team skills performed as an evolution by an engine company, including ladder and hose evolutions, power tools, rescue practice and procedures.

*Prerequisite:* FISC 101 and FISC 111.

**FISC 125** 3 cr

### Emergency Service Rescue

Studies a variety of procedures, equipment, and tools utilized by

emergency rescue personnel. Student will become familiar with building search, auto extrication, rope rescue, and water rescue.

*Prerequisite:* FISC 112 or instructor permission.

**FISC 129** 3 cr

### Emergency Incident Management

Studies the emergency incident management (IMS) process as it applies to the fire service at the "fire company" level. Emphasis to include basic command structure and components, incident safety considerations, personnel accountability, and application of the management process to a variety of emergency situations.

**FISC 170** 8 cr

### Emergency Medical Technician I

Provides skill development in recognition of symptoms of illness and injuries, and in proper emergency care problems. Includes proficiency tests and evaluation sessions. Prepares students to take the state certification examination for EMT I.

**FISC 175** 6 cr

### First Responder

Introduces the concept of preliminary emergency medical care and teaches the skills needed to provide such care with a limited amount of equipment. Emphasizes the roles and responsibilities of the first responder, including acting as liaison with other emergency service personnel, recognizing the seriousness of patients' conditions, and administering appropriate emergency medical care for life-threatening injuries.

*Prerequisite:* Instructor permission.

**FISC 204** 5 cr

### Report Writing for Fire Fighters

This course provides technically specific writing skills for persons enrolled in Fire Science programs. Training will include the effective preparation of field reports, inspection reports, and various narratives. This writing process, research writing and editing for grammar and punctuation are reviewed.

**FISC 205** 3 cr

### Fire Investigation and Cause Determination

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.

**FISC 206** 3 cr

### Hazardous Materials

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.



**FISC 207** 3 cr  
**Fire Apparatus and Pumping Equipment**

Provides an introduction to various fire pumps and their operation. Reviews operating principles and construction of various equipment, and covers preventive maintenance and troubleshooting. Also introduces ground flow and friction loss considerations, and pump discharge pressure calculations.

**FISC 210** 3 cr  
**Building Construction for Fire Protection**

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.

**FISC 215** 3 cr  
**Fixed Systems and Extinguishers**

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.

**FISC 220** 4 cr  
**Wildland Fire Fighter II**

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.

**FISC 224** 3 cr  
**Fire Service Instructor I**

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.

**FISC 230** 1 cr  
**Wildland Firefighter II Refresher**

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** 3 cr  
**Fire Fighting Tactics and Strategy**

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.

## French (FRCH) (was FREN)

**FRCH 110 (was FREN 110)** 3 cr  
**Introduction to French Language and Culture** H

Surveys art and culture in France, introduces the French language, and provides a multicultural overview of the French speaking world. Students cannot earn credit for both FRCH 110 and FRCH 114.

**FRCH 114 (was FREN 114)** 3 cr  
**Intro to French Language and Culture: Study Abroad** H

Surveys art and culture in France, introduces the French language, and provides a multicultural overview of the French speaking world through study abroad.

**FRCH& 121 (was FREN 101)** 5 cr  
**French I** H

Provides a foundation for communicative competency and oral proficiency in simple and correct French. Listening comprehension, speaking, writing, and reading skills will be stressed with a primary emphasis on comprehension and speaking in the present tense.

**FRCH& 122 (was FREN 102)** 5 cr  
**French II** H

Continues development of a foundation for communication in French. Introduces past and future tenses.

*Prerequisite:* FRCH& 121 (was FREN 101) or one year of high school French.

**FRCH& 123 (was FREN 103)** 5 cr  
**French III** H

Provides practice in pronunciation and translation of French. Listening and speaking are stressed.

*Prerequisite:* FRCH& 122 (was FREN 102) or two years of high school French

**FRCH& 221, 222, 223** 5 cr  
**(was FREN 201, 202, 203)**  
**French IV, V, VI**

Reviews basic structure; expands conversation and reading skills. Thematic approach to contemporary French culture and literature.

*Prerequisites:*

For FRCH& 221 (was FREN 201) – FRCH& 123 (was FREN 103), 3-4 years of high school French or equivalent.

For FRCH& 222 (was FREN 202) – FRCH& 221 (was FREN 201), 3-4 years of high school French or equivalent.

For FRCH& 223 (was FREN 203) – FRCH& 222 (was FREN 202), 3-4 years of high school French or equivalent.



## Geography (GEOG)

### GEOG 105 3 or 5 cr **Physical Geography** **NS, NSL**

Uses maps to examine the distribution and interrelationships of such factors of our physical environment as climate, soils, vegetation, and landforms. Topics include Earth–Sun relationships, seasons, time, weather, hydrology, geomorphology, natural vegetation, ecosystems, and their significance within the biosphere. Students may choose to take the course for 3 credits (lecture only) or for 5 credits (lecture and lab). Laboratory includes use of globes, maps, and aerial photographs for analysis and problem solving. Field trip may be required.

## Geology (GEOL)

### GEOL 105 5 cr **Geology: Earth Revealed** **NSL**

Offers a comprehensive one-term study of the Earth's physical properties and processes. Major topics are rocks and minerals, weathering, erosion, deserts, coasts, ground water, plate tectonics, volcanoes, earthquakes, mountain building, and geologic hazards. Laboratory work, to be completed at home, includes identification of minerals and rocks and map interpretation. This telecourse is recommended only for the strongly self-motivated student. It is not intended for geology majors.

### GEOL 116 5 cr **Geology of Earth's Interior** **NSL**

Examines Earth's internal composition, structure, and dynamic internal processes. Major topics include minerals, the rock cycle, volcanoes, earthquakes, mountain building, plate tectonics, and geologic resources. Laboratory work includes identification of minerals and rocks, location of earthquake epicenters, and mapping of geologic hazards. A field trip may be required.

### GEOL 117 5 cr **Geology of Earth's Surface** **NSL**

Examines Earth's surface rocks, structures and processes including weathering, landslides, and erosion. Major topics include minerals, rocks, streams, glaciers, waves, coasts, deserts, ground water, geomorphology, and geologic resources. Laboratory work includes identification of rocks, interpretation of topographic maps, and recognition of geologic hazards. A field trip may be required.

### GEOL 118 5 cr **Historical Geology** **NSL**

Examines the physical and biological evolution of Earth as determined from evidence preserved in rocks. Major topics include plate tectonics, evolution, biogeography geologic time, and climate change. Laboratory includes identification of rocks and fossils,

determination of relative and absolute ages, and interpretation of past environments. A field trip may be required.

### GEOL 170 3 or 5 cr **Geology of the Pacific Northwest** **NS, 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. Students may choose to take the course for 3 credits (lecture only) or for 5 credits (lecture and lab). Laboratory includes rock identification, interpretation of topographic and geologic maps of the Northwest. Field trips may be required.

## Health (HLTH)

### HLTH 100 3 cr **Occupational Safety and Health**

Introduces fundamental concepts and practices related to safety and hygiene in the work place, including bloodborne and airborne pathogens, AIDS awareness and risk reducing behaviors. First Aid/CPR-D training is included. Students are issued First Aid/CPR-D Health Care Provider card upon completion.

### HLTH 106 2 cr **Health Today** **SS**

Analyzes a vast array of information on the dangers of risky health behavior and the benefits of healthy decisions as they affect one's life. Emphasis will be on personal decision-making and positive behavioral changes toward the goal of wellness as a lifestyle.

## High School Completion (HSC)

### HSC 001 1-5 cr **Health**

Covers six topics in the areas of physical, mental, and emotional health.

### HSC 010 1-5 cr **Introduction to Literature**

Covers the types and aspects of the novel. Students study chapters of popular classic novels and one of the novels in depth.

### HSC 011 1-5 cr **Literature: The Short Story**

Provides instruction for students to learn to analyze the development of plot, character, point of view, mood, and theme. Includes writing plot summaries and answers to study questions.

*Prerequisite:* 9th grade reading level.



<b>HSC 012</b> <b>Introduction to Writing</b>	1-5 cr
Provides instruction and practice in proper sentence structure and paragraphing.	
<b>HSC 013</b> <b>Grammar and Writing</b>	1-5 cr
Emphasizes development of detail and various forms of, organization in writing. Students use text materials based on diagnostic testing.	
<b>HSC 024</b> <b>Physical Geography</b>	1-5 cr
Surveys physical geography that includes a lab component.	
<b>HSC 030</b> <b>U.S. Government</b>	1-5 cr
Surveys the United States system of government including the United States Constitution, the three branches of government, and the effect citizens have on governmental decisions.	
<b>HSC 031</b> <b>U.S. History I</b>	1-5 cr
Surveys pre-colonial history through 1876 with a concentration on major issues, events and people in the developing American nation.	
<b>HSC 032</b> <b>U.S. History II</b>	1-5 cr
Provides a continuation of U.S. History I, covering the period from 1876 to present.	
<b>HSC 033</b> <b>Washington State History</b>	1-5 cr
Surveys early development in the Pacific Northwest, including Native American history, early white explorers, government claims, treaties and wars, resources and industries, and the statehood of Oregon and Washington.	
<b>HSC 035</b> <b>Contemporary World Problems</b>	1-5 cr
Surveys current world problems regarding the environment, health, and politics, and how they may influence future generations.	
<b>HSC 042</b> <b>Consumer Finance</b>	1-5 cr
Presents topics necessary for personal money management, including budgeting, banking, consumer credits, taxes, and the role of the consumer in the economy. This course is intended as an elective or a math course. Basic math skills are recommended.	

## History (HIST)

<b>HIST&amp; 116 (was HIST 106)</b> <b>Western Civilization I</b>	5 cr
(was titled Western Civ to 1500) <b>H</b>	
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.	
<b>HIST&amp; 117 (was HIST 107)</b> <b>Western Civilization II</b>	5 cr
(was titled Western Civ 1500 – 1850) <b>SS</b>	
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.	
<b>HIST&amp; 126 (was HIST 116)</b> <b>World Civilization I</b>	5 cr
(was titled World History to 1500) <b>H</b>	
Focuses on the origins, development, and cultural features of various societies up to 1500 C.E., 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 cultures.	
<b>HIST&amp; 127 (was HIST 117)</b> <b>World Civilization II</b>	5 cr
(was titled World History 1500 – 1800) <b>SS</b>	
Examines the dramatic changes in world history in the 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.	
<b>HIST&amp; 128 (was HIST 118)</b> <b>World Civilization III</b>	5 cr
(was titled World History 1800 – Present) <b>SS</b>	
Examines the ways people in the past two hundred years have shaped and reacted to the issues of the modern world. Special attention may be given to “modern” themes: 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.	



**HIST& 136 (was HIST 156)**

5 cr

**U.S. History I**

(was titled U.S. History to 1865)

**SS**

Focuses on the causes and effects of social, cultural, political, intellectual and economic change. Attention will also be given to the events outside North America which contributed to the emergence of the United States.

**HIST& 137 (was HIST 157)**

5 cr

**U.S. History II**

(was titled U.S. History 1865 – Present)

**SS**

Focuses on the causes and effects of social, cultural, political, intellectual and economic change, from the end of the Civil War to the present. Attention will also be given to the events (e.g., immigration) outside North America that contributed to the emergence of the U.S. as well as the effects (e.g., imperialism) of its emergence on the rest of the world.

**HIST 205**

5 cr

**History of East Asia****SS**

Surveys East Asian historical development from early in the nineteenth century to the present, focusing on China and Japan. 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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**HIST 254**

5 cr

**History of Washington and the Pacific Northwest****SS**

Provides a social, political, economic history of the Pacific Northwest with particular emphasis on the State of Washington, including Native American history and gender/ethnic history. Course meets the Washington State History requirement for teacher certification. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

**Home and Family Life (HOFL)****HOFL 131, 132, 133**

3 cr

**Parent/Child Experience****SSA**

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 Head Start/ECEAP classrooms. Other options provided for students include parent seminars and independent parent/child projects.

**HOFL 156**

1-5 cr

**Foster Parent/Day Care Home Operations**

Improves understanding of child behavior, develops self-awareness and self-esteem, and enhances communication skills and image among licensed day-care home operators and foster parents.

*Prerequisite:* Instructor permission.**HOFL 160**

2 cr

**Divorce Recovery**

Offers support and encouragement for the challenges and adjustments involved in the end of a relationship. Emphasis will be placed on understanding the process of loss, improving self-esteem, gaining effective communication skills, and developing positive adult relationships. Participants will be encouraged to establish goals for future growth.

**HOFL 190**

3 cr

**Independent Living**

Trains foster parents and Division of Children and Family Services social workers to advance the independent living skills of adolescents in the foster care system.

**Human Development (HDEV)****HDEV 075**

2 cr

**Journeys—A Workshop for Women**

Targets women in life transitions – divorce, empty nest, job loss, etc. – and provides them with tools to understand the challenges involved in change and new beginnings. Explores the process of transition, models of adapting to change, self-awareness, and self-assessment. Participants will explore educational and career options, with a focus on non-traditional careers that offer high-wage, high-demand opportunities, and develop a personal Success Plan. Meets for seven weeks and is graded on a pass/fail basis.

**HDEV 080**

2-7 cr

**Transitions**

Explores personal survival skills to move from job loss or underemployment to the next step. May upgrade basic skills in reading, writing, and math, and introduces the use of computer.

**HDEV 089**

1 cr

**International Student Cultural Experience**

Provides a real-life orientation for international students to become acquainted with cultural resources in the community.



**HDEV 099** 1 cr  
**International Student Orientation**  
 Orients international students to American culture, including differences and expectations within the areas of academia, family life, and the community. Acquaints students with American values; American college expectations, practices, and services; accessing banking, laundry, shopping, and transportation in the community; and safety and emergency issues.

**HDEV 100** 1 cr  
**New Student Orientation**  
 Helps students gain in-depth knowledge of the enrollment process, student rights and responsibilities, and college policies and procedures. Emphasizes activities and services available in Career and Employment Services, Computer Labs, the Learning Center, Financial Aid, and the LCC Library. Students will be required to attend two student success series workshops.

**HDEV 101** 2, 3, or 5 cr  
**Career Planning**  
 Launches students into an investigation of interests, values, and careers, followed by decision-making and goal setting. The class may be offered for 2, 3 or 5 credits and emphasis in the content varies accordingly.

**HDEV 106, 107, 108, 206, 207, 208** 1-2 cr  
**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.

**HDEV 110** 1-3 cr  
**Job Finding Skills**  
 Provides effective job search techniques, including identification of transferable skills, job applications, job readiness, and creative job search. Students should be ready to conduct an active job search.

**HDEV 115** 2 cr  
**Stress Management**  
 Focuses on developing effective life coping skills as related to interpersonal, work, family, and academic stressors. Students examine their beliefs, emotions, and self-defeating behaviors.

**HDEV 116, 117, 118, 216, 217, 218** 1-3 cr  
**Leadership and Student Government**  
 Offers experience in elections, meeting procedure, college and ASLCC committees, planning and conducting governance activities, planning and managing budgets, deliberating issues and setting goals for student welfare, and effective leadership responsibilities. Students enrolled in this class are voting members of the Executive Council of the ASLCC.

**HDEV 120** 1 cr  
**Individual and Group Relations**  
 Extends to students opportunities in transfer information, goal setting, and other areas related to behavior change. Course may be repeated up to six times for a total of 6 credits.

**HDEV 125** 2 cr  
**Assertiveness Training**  
 Examines interpersonal dynamics of relationships and personality. Students explore fears and anxieties connected to their interpersonal conflicts, as well as the impact of their personality on communication and behavior.

**HDEV 127** 1-3 cr  
**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 each student’s Individualized Academic Plan and personal needs will determine the class content.

**HDEV 145** 2 cr  
**Anger Management**  
 Encourages students to examine irrational beliefs and self-defeating behaviors. Focus is on covert and overt behaviors contributing to the power held by our “intimate enemies.”

**HDEV 150** 2 or 3 cr  
**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.



## Humanities (HUMN)

**HUMN 110** 5 cr  
**Introduction to Cultures** H

Focuses on United States immigrant groups and introduces students to a specific culture each quarter. The course will explore language, history, and social structures of the country of origin to provide insight into values and customs. The class schedule will specify the group to be featured during a given quarter and may change from quarter to quarter. For example, one quarter may feature Vietnamese while another may focus on Russian, Mexican, or other immigrants. Meets the associate's degree cultural diversity requirement.

**HUMN 164, 165, 166** 5 cr  
**Lifestyles** H

Examines personal lifestyles affecting daily life, exploring them through a variety of topics in the humanities. Drama, film, music, art, architecture, etc.

**HUMN 210** 5 cr  
**Myths and Rites** H

Explores representative creation, flood, and death-resurrection myths and rituals from Egyptian, Mesopotamian, Hindu, Greek, Judeo-Christian, and North American sources. Addresses the symbol, myth, and ritual in general along with cultural similarities and differences. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

**HUMN 220** 1-10 cr  
**Arts Alive**

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.

**HUMN 230** 5 cr  
**Thinking About Thinking** H

Examines and explores the role of critical thinking and analysis in evaluating written material to include literature, non-fiction prose, and media sources. Applies various models from formal logic and literary criticism to discover both the explicit and implicit meaning of fiction, non-fiction prose and media sources.

*Prerequisite:* ENGL& 101 or instructor permission.

## Individual Development (INDV)

**INDV 050** 1 cr  
**Review Math—Whole Numbers**

Provides a review of basic concepts of addition, subtraction, multiplication, and division of whole numbers.

**INDV 051** 1 cr  
**Review Math—Fractions**

Provides a review of basic concepts of mathematics. This course teaches addition, subtraction, multiplication, and division of fractions.

**INDV 052** 1 cr  
**Review Math—Decimals**

Provides a review of basic concepts of mathematics. This course teaches addition, subtraction, multiplication, and division of decimal numbers.

**INDV 053** 2 cr  
**Review Math — Ratios, Proportions and Percents**

Provides a review of basic concepts of mathematics. The course teaches ratios, proportions and percents.

**INDV 065** 5 cr  
**Reading and Writing Basics**

Provides an understanding of the reading and writing process including how to write clear sentences and paragraphs. Instruction in vocabulary development and effective reading are also covered. Students have opportunities to work individually as well as in collaboration with others.

*Prerequisite:* COMPASS score of 40-68 in reading.

**INDV 069** 1-5 cr  
**Second Language Grammar and Writing**

Provides opportunity to improve skills in writing grammatically complete sentences, paragraphs, and short essays. Topics address writing process and grammar usage. This individualized course may be used to satisfy the high school English equivalency requirement.

**INDV 072** 1-2 cr  
**Sentence and Paragraph Structure**

Provides opportunity to improve skills in writing complete and coherent sentences and paragraphs. Sentence patterns, paragraph development, and paragraph unity are also presented. This individualized course may be used to satisfy the high school English equivalency requirement.



<p><b>INDV 073</b>  <b>The Three-Part Formal Essay</b>                      Presents an opportunity for improvement in short essay writing. Topics include introduction, body, conclusion, and transitions. This individualized course may be used to satisfy the high school English equivalency requirement.</p>	<p>1-2 cr</p>	<p><b>INDV 095</b>  <b>General Vocabulary Building</b>                      Improves general speaking and writing vocabulary. Word attack skills that may be applied to help determine the meaning of any unfamiliar word are developed.</p>	<p>1 cr</p>
<p><b>INDV 075</b>  <b>Reading and Writing Improvement</b>                      Provides instruction in improving students' reading and writing. Students will be taught how to use steps of the writing process to achieve clear expression and, at the same time, taught how to improve literal and critical reading comprehension skills. Students needing additional remediation will complete individualized reading, spelling and/or grammar punctuation modules in the learning lab.</p> <p><i>Prerequisite:</i> COMPASS scores of 69-80 in reading or completion of INDV 065 with a grade of C or better.</p>	<p>5 cr</p>	<p><b>INDV 096</b>  <b>Textbook Reading Techniques</b>                      Provides techniques that improve the ability to read and comprehend college textbooks. Skills include pre-reading, skimming, scanning, marking, highlighting, and annotating.</p>	<p>1 cr</p>
<p><b>INDV 085</b>  <b>College Readiness</b>                      Provides preparation for academic and personal success at the community college and also provides hands-on workshops to familiarize students with the computing labs, the library, the Career Center, and the Tutoring Center.</p> <p><i>Prerequisite:</i> This course is mandatory for all first quarter students testing into INDV 065 or INDV 075.</p>	<p>2 cr</p>	<p><b>INDV 097</b>  <b>Spanish Grammar for Beginners: Present Tense Verbs</b>                      Provides an individualized plan for students who need more time to master language, reading comprehension, and/or study skills as recommended by the instructor, student, and/or Learning Center supervisor. This course is graded on a pass/fail basis.</p>	<p>2 cr</p>
<p><b>INDV 091</b>  <b>Basic Spelling</b>                      Provides a review of basic spelling patterns including consonant and vowel sounds, blends, plurals, and common confusing words. An initial diagnostic test will determine the individual student's placement.</p>	<p>1 cr</p>	<p><b>INDV 098</b>  <b>Spanish Grammar for Beginners: Agreement of Nouns and Modifiers</b>                      Enables understanding of grammatical agreement 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.</p>	<p>2 cr</p>
<p><b>INDV 092</b>  <b>Advanced Spelling</b>                      Provides a review of more advanced spelling patterns to include silent letters, plurals, possessives, doubling consonants, and the "i before e" rule. An initial diagnostic test will determine the individual student's needs.</p>	<p>1 cr</p>	<p><b>INDV 099</b>  <b>Learning Center Lab Practicum</b>                      Provides an individualized plan for students who need more time to master language, reading comprehension, and/or study skills as recommended by the instructor, student, and/or Learning Center supervisor. This course is graded on a pass/fail basis.</p>	<p>1-3 cr</p>
<p><b>INDV 093</b>  <b>Test Taking</b>                      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.</p>	<p>1 cr</p>	<p><b>INDV 100</b>  <b>Basic Grammar</b>                      Offers basic grammar skills including simple and compound sentences, appropriate use of subject, verbs, and pronoun agreement referent, prepositional and infinitive phrases, capitalization, recognition of the eight elements of English and correct punctuation to include the period, comma, apostrophe and semi-colon use.</p>	<p>3 cr</p>
<p><b>INDV 094</b>  <b>Note Taking</b>                      Prepares students to effectively take lecture notes. Techniques include active listening, looking for main ideas, using signal words, and organizing notes.</p>	<p>1 cr</p>	<p><b>INDV 101</b>  <b>Advanced Grammar</b>                      Offers advanced grammar skills including the use of phrases and clauses, simple, compound, complex, and compound-complex sentence structure, correct idiomatic language, quotation marks and colons, academic diction, and style.</p>	<p>2 cr</p>



**INDV 104** 1-2 cr  
**Accelerated Review of Grammar/  
Punctuation**

Offers an individualized opportunity for advanced skill work with verbs, subjects, modifiers, sentence construction, capitalization, and the following punctuation marks: comma, apostrophe, quotation marks, and semicolon.

**INDV 105** 1-2 cr  
**Content Reading and Learning Skills**

This course is to be linked to any college course which requires academic rigor. The course provides strategies and practices in reading and studying in an actual content class. Study skills topics include lecture note-taking, textbook comprehension, marking and note-taking from textbooks, and how to prepare for and take exams. In addition to developing effective study skills, the course will provide professional learning assistance in a linked course.

**INDV 109** 1-3 cr  
**Content Learning Skills**

Learning skills class for average to above average students who are concurrently enrolled in a college level or a college preparation course. Students are provided strategies and practice in reading and studying in an actual content class textbook. Other study skills topics include time management, lecture note-taking, marking and note-taking from textbooks, and how to prepare for and take exams.

**INDV 191** 1-3 cr  
**Introduction to Tutoring**

Trains tutors in the basic techniques involved in helping others learn how to learn. These techniques include effective communication, human relations training, teaching strategies and study skills. Practice in utilizing tutoring skills will be incorporated. Actual tutoring experience will be evaluated during the quarter.

## Individualized Certificate Program (ICP)

**288** 1 – 4 cr  
**Cooperative Work Experience**

You, your employer, and the ICP manager decide what you will learn during your on-site training. You will keep a journal of your experience and attend a weekly seminar to track your progress.

**289** 1 cr  
**Classroom Seminar**

A weekly seminar to assist you in preparing for your cooperative work experience and for future employment. You will conduct informational interviews, prepare for job interviews, write an effective resume, learn job search skills, and create your employment portfolio.

## Industrial Maintenance Technology (IMT)

**IMT 100 (was IMT 101/IMT 102/IMT 104  
and MAMT 101)** 3 cr  
**Maintenance Fundamentals**

Introduces essential elements of industrial maintenance. Provides an overview of the jobs and tasks generally performed in maintenance-related trades, including millwright, electrical maintenance, and instrumentation. Fundamental topics covered include the proper use of a variety of hand tools and measuring instruments, an exploration of fasteners and bearings, and safety procedures including lockout/tag out of electrical/mechanical equipment. Sketching using ANSI standards, layout and machinery installation, and basic troubleshooting techniques are also covered.

**IMT 104 (was IMT 111/IMT 112/IMT 113  
and MAMT 105/MAMT 109/MAMT 209)** 3 cr  
**Rigging, Lifting, and Rigging Inspection**

Introduces essential elements of rigging gear inspection and lifting calculations using safe rigging and lifting procedures. Provides an overview of safety characteristics and capacities of lifting gear, as well as equipment removal criteria using OSHA and ASME standards. Rigging and lifting fundamentals include load weight estimation, selection of sling and rigging hardware, calculation of sling tension, locating the center of gravity of a load, and proper load moving procedures.

*Prerequisite:* Math 091 or placement test.

**IMT 106 (was IMT 116)** 1 cr  
**Industrial Lubrication**

Introduces various types of lubrication systems and their maintenance requirements, including ring, bath, splash, and constant level forced feed lubrication systems. Participants learn the importance of following lubrication schedules, how to change common types of oil filters, and how to properly handle and store lubricants to prevent lubricant contamination.

**IMT 107 (was IMT 117 and MAMT 115)** 1 cr  
**Mechanical Seals**

Covers the function, operation and repair of common mechanical seals. Failure analysis and identification seal removal and disassembly/re-assembly are included.

**IMT 108 (was IMT 118 and MAMT 120)** 1 cr  
**Bearings-Reducing Failure Rate**

Covers removal, inspection, selection, handling, installation, and troubleshooting of bearings according to manufacturer's instructions and best practices. Participants learn to identify replacement bearings and install and maintain the bearings properly using the right tools.



**IMT 110 (was IMT 120 and MAMT 125) 4 cr**  
**Rotating Equipment Predictive Maintenance & Alignment**

Explores the use of predictive maintenance techniques as a tool for prolonging equipment life and preventing major problems. Studies vibration analysis, lubricant and trend analysis, and techniques for extending bearing life. Principles of and procedures for reverse double dial alignment are also included.

**IMT 130 (was IMEL 100) 1 cr**  
**Electrical Safety**

Covers the principles of basic electrical safety as well as how to perform lockout and tag out procedures in accordance with OSHA requirements.

**IMT 131 5 cr**  
**Electrical Fundamentals D.C. Circuits**

An introduction to the nature and principles of electricity, interpretation of electrical and schematic diagrams, Ohm's Law, basic electrical circuit analysis, applied mathematical concepts used in solving for values in series and parallel circuits, electrical safety and basic magnetic concepts. Hands-on laboratory experiments constructing circuits, using electrical measuring equipment, and troubleshooting. The course is designed for individuals entering the electrical trades, maintenance personnel or process operators.

*Prerequisite:* Math 092 and IMT 130 or higher or concurrent enrollment in IMT 130 or instructor permission.

**IMT 132 5 cr**  
**Electrical Fundamentals A.C. Circuits**

The study of Alternating Current circuits, the use of AC measuring instruments, the use of vectors in AC circuit analysis, calculation of power factor and its correction, single phase and three phase AC distribution systems, transformers, and awareness and compliance with safe work practices. Hands-on laboratory experiments constructing AC circuits, using AC measuring equipment, and circuit troubleshooting. The course is designed for individuals entering the electrical trades, maintenance personnel or process operators.

*Prerequisite:* IMT 131 or instructor permission.

**IMT 133 6 cr**  
**Introduction to Solid State Electronics**

Includes introductory diode and transistor theory, basic amplifier circuits, operational amplifiers, power supplies, oscillators, and pulse circuits. Theory is supplemented with many laboratory exercises.

*Prerequisite:* IMT 132.

**IMT 134 (was IMT 139 and IMEL 110) 2 cr**  
**Electrical/Electronic Test Instruments**

Covers the proper use of clamp-on ammeters, Wheatstone bridges, and oscilloscopes. Analog and digital meters are covered, as well as how to interpret oscilloscope waveforms.

*Prerequisite:* IMT 131 or concurrent enrollment.

**IMT 135 (was IMT 136 and IMEL 102) 1 cr**  
**Electrical Print Reading**

Teaches participants to read and interpret wiring diagrams, single line diagrams, building electrical diagrams, and ladder diagrams. Relevant schematic symbols and the application of various diagrams are also covered.

**IMT 136 (was IMT 135 and IMEL 120) 1 cr**  
**Conduit Bending and Installation**

Provides instructions and interaction concerning general conduit bending and installation in accordance with the National Electric Code (NEC).

**IMT 139 (was IMT 137 and IMEL 103) 3 cr**  
**National Electric Code**

Introduces the various requirements of the latest edition of the national electric code. Major sections and regulations are explored, with particular emphasis on interpretation and application.

*Prerequisite:* IMT 132 or instructor permission.

**IMT 140 (was IMIN 100) 2 cr**  
**Fundamentals of Industrial Measurement**

Introduces process control principles of measuring temperature, pressure, level, and flow. A wide variety of measuring instruments, including manometers, mechanical pressure sensors, transducers, thermometers, pyrometers, and thermistors, are described and demonstrated.

**IMT 144 (was IMIN 105) 1 cr**  
**Industrial Process Control**

Introduces students to the principles of single-loop, multi-loop, and digital process control systems. Control modes, advanced control strategies, and feedback and feed forward control are among the topics explored.

*Prerequisite:* MATH 106 or higher is highly recommended.

**IMT 200 (was MAMT 204) 1 cr**  
**Centrifugal Pump Repair**

Explains the basic operation of a "typical" centrifugal pump. This course covers troubleshooting as well as disassembly, inspection, and reassembly, and include general guidelines for mechanical seal installation.

*Prerequisite:* Completion of all 100 level IMT courses or instructor permission.



- IMT 204 (was MAMT 205)** 1 cr  
**Air Compressor Repair**  
 Explains the basic operation, disassembly, inspection, repair, reassembly and troubleshooting of reciprocating air compressors. Problems such as knocking, failure to unload, and excessive discharge temperature are included. Prevention of injury/damage is also covered.  
*Prerequisite:* Completion of all 100 level IMT courses recommended.
- IMT 205 (was MAMT 210)** 1 cr  
**Valve Repair**  
 Covers the disassembly, inspection, and repair of gate, globe, and control valves. Emphasis is placed on the proper functioning and maximization of performance through proper inspection and maintenance.  
*Prerequisite:* Completion of all 100 level IMT courses or instructor permission.
- IMT 209 (was MAMT 215)** 2 cr  
**Pipefitting**  
 Introduces the characteristics of piping systems and explains how to read associated blueprints, methods of selecting, measuring, cutting, threading, installing and insulating pipe are covered.  
*Prerequisite:* Completion of all 100 level IMT courses or instructor permission.
- IMT 231 (was IMEL 201)** 3 cr  
**Electrical Control Equipment**  
 Introduces the operation, troubleshooting, and adjustment of various types of control equipment. Fuses, molded case circuit breakers, and control switches are covered. Includes basic principles of motor starters and troubleshooting of control circuits.  
*Prerequisite:* IMT 132 or concurrent enrollment or instructor permission.
- IMT 232 (was IMEL 202)** 2 cr  
**Electric Motors**  
 Covers the concepts, maintenance, and testing of AC and DC motors. Includes a study of components and operation of a variety of AC motors and DC motors. Single-phase and three-phase motors are covered.  
*Prerequisite:* IMT 231 or instructor permission.
- IMT 233 (was IMEL 203)** 2 cr  
**Electrical Switchgear**  
 Explores common components located in switchboards. Circuit breakers, bus work, disconnect, and protective relays are covered. Particular attention is given to the role played in protecting distribution systems, preventing arcing, and testing control systems.  
*Prerequisite:* IMT 232 or instructor permission.
- IMT 234 (was IMEL 215)** 2 cr  
**Digital Electronic Theory**  
 Covers the operation and troubleshooting of various types of digital circuits. Binary logic and the use of logic gates, codes, encoders, decoders, counters, registers and data transmission are explored.  
*Prerequisite:* IMT 132, 134 and 135 or instructor permission.
- IMT 236** 5 cr  
**Applied Digital Electronics**  
 Includes bread boarding techniques, component identification, logic and schematic diagrams, number systems, codes, basic gates, combinational logic, sequential logic, counters, shift registers, encoders, multiplexers, de-multiplexers and logic family characteristics. Circuit exploration and troubleshooting techniques are explored in the laboratory.  
*Prerequisite:* IMT 131.
- IMT 239 (was IMEL 220)** 2 cr  
**Programmable Controllers**  
 Trains participants to understand programmable controller system operations, interpret power flow through ladder logic, and troubleshoot common system failures. Troubleshooting simulations are included.  
*Prerequisite:* IMT 134 or instructor permission.
- IMT 244 (was IMIN 205)** 3 cr  
**Instrument Calibration**  
 Covers the calibration of pressure, differential pressure, temperature, flow, and level measurement instruments. Calibration basics, proper instrument performance, and common instrument errors are explained. Specific instruments covered include pressure transmitters, thermocouples, various types of flow meters, and electronic displacement transmitters.  
*Prerequisite:* INTC 100 and MATH 106 or instructor permission.
- IMT 245 (was IMIN 210)** 1 cr  
**Digital Instrumentation**  
 Introduces the principles of digital instrumentation and signal transmission. Principles of operation, the functions of electronic components, signal characteristics, and operation of single-loop digital controllers are included.  
*Prerequisite:* IMT 134, 140, 144 and MATH 092 or equivalent experience are highly recommended.
- IMT 249 (was IMIN 220)** 3 cr  
**Troubleshooting Control Systems**  
 Introduces a systematic approach to troubleshooting all control systems, be they single/multiple box, or distributive. Enhances logical thinking.  
*Prerequisite:* IMT 140, 144, 244 and MATH 092 or equivalent experience are highly recommended.



**IMT 264 (was MAMT 265) 3 cr**  
**Applied Mechanical Maintenance Techniques**

Offers instruction in application of a wide variety of maintenance skills to a variety of mechanical maintenance situations. Practical application and problem solving are emphasized.

*Prerequisite:* Completion of all 100 and 200 level Mechanical courses or instructor permission.

**IMT 265 (was IMEL 265) 3 cr**  
**Applied Electrical Maintenance Techniques**

Offers instruction in application of a wide variety of electrical skills with emphasis on problem solving.

*Prerequisite:* Completion of all 100 and 200 level Instrumentation courses or instructor permission.

## Instrumentation Technology (INTC)

**INTC 101 6 cr**  
**Process Control I**

Covers temperature bridges, preparation and development of temperature media and devices, calibration of simple temperature devices, the theory and physics behind pressure and pressure measurements and level measurement using different techniques.

*Prerequisite:* IMT 131, or instructor permission.

**INTC 102 6 cr**  
**Process Control II**

Covers methods and operation of flow measurement including orifice plates and venturi tubes, the function of relays and square root extractors in the process loop, and piping and instrument diagrams. Applies sensing and measurement principles in studying control loops, types and modes of control, and application of control elements, control valves, and actuators.

*Prerequisite:* INTC 101, or instructor permission.

**INTC 201 6 cr**  
**Electronic Measuring Principles**

Applies electronic fundamentals to measurement of viscosity, consistency, analytical measurements and data recorders. Discussions are supported by demonstrations, videotapes, and hands-on experience.

*Prerequisite:* INTC 102, IMT 132, or instructor permission.

**INTC 202 6 cr**  
**Electronic Instrumentation and Control**

Offers a discussion of electronic signal converters and conditioners, electronic control diagrams, process characteristics and disturbances. Feedback control loops are covered with various controller modes of operation and proper calibration and tuning procedures. Cascade, ration, dead time, forward and multivariable controls are introduced. Also covers troubleshooting techniques in electronic control systems.

*Prerequisite:* INTC 201 or instructor permission.

**INTC 225 6 cr**  
**Programmable Logic Controllers, Sensors and Communications**

Covers programmable logic controller (PLC) components, internal operation and structure, number systems, basic programming, timers and counters, sensors, I/O modules, arithmetic instruction, advanced programming techniques, communications and installation, and troubleshooting. Theory supported with hands-on laboratory exercises in PLC system configuration and programming.

*Prerequisite:* IMT 131, INTC 102 or instructor permission.

## Journalism (JOURN)

**JOURN 110, 120, 130, 210, 220, 230 1-3 cr**  
**Editing/Newspaper Production**

Provides hands-on experience in news writing, photography, editing, design and layout.

*Prerequisite:* ENGL& 101, high school journalism or newspaper experience, or instructor permission.

**JOURN 200 5 cr**  
**Basic News Writing H**

Provides a hands-on overview of the main aspects of newspaper reporting, including generating story ideas, gauging the newsworthiness of stories, interviewing news sources, and writing various types of stories – from personality profiles to “hard” news to human-interest features. Course requirements include reading and analyzing professional newspaper stories as well as writing news articles and performing all the steps that go along with that. This may be offered as a Capstone course. See Capstone prerequisites on Page 31.

*Prerequisite:* ENGL& 101 with a grade of C or better or instructor permission.



## Library (LIBR)

**LIBR 101** 2 cr  
**Introduction to Library & Information Research** H

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 the Internet, online databases and library catalogs, and the use of various print 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.

## Machine Trades (MASP)

**MASP 107** 2-6 cr  
**Machining for Related Occupations**

This course will expose students to three basic types of machine tools as well as general shop safety, layout, cutting tool geometry, and precision measuring. The three areas of focus will be hole operations such as drilling, reaming, and tapping, engine lathe operations such as turning, facing, and boring, and the basic operation of the vertical milling machine.

**MASP 111** 2-10 cr  
**Machine Shop I**

Designed to introduce the beginning student to the safe operation of basic hand tools, saws, bench grinders, drill press and the engine lathe. The student will use these tools to complete basic projects designed to use the equipment in a wide variety of operations to develop basic skills.

**MASP 112** 2-10 cr  
**Machine Shop II**

Continues building skills learned in MASP 111, while expanding the scope to include more advanced procedures on equipment used in the previous class. This class also introduces new equipment such as a shaper and surface grinder, along with tools and procedures required for their safe operation.

*Prerequisite:* MASP 111.

**MASP 113** 2-10 cr  
**Machine Shop III**

Teaches students the use of milling machines and carbide cutting tools. This course will cover various techniques of holding parts and the proper use of different styles of machinery. The student will also learn to apply basic and advanced procedures to accomplish the required tasks.

*Prerequisite:* Completion of, or concurrent enrollment in MASP 112.

**MASP 114** 2-10 cr  
**Machine Shop IV**

Teaches design, and students will build a major project using as many machines and skills as possible to complete the project within the quarter. The project must demonstrate the proper use of machine tools and procedures learned throughout the program.

*Prerequisite:* Completion of, or concurrent enrollment in MASP 113.

**MASP 204** 3 cr  
**CNC Machining Center Fundamentals**

This course introduces students to the history, theory, and workings of computer numerically controlled Machining Centers. The course provides a basic understanding of the required skills to program, set up, and operate computerized machine tools.

**MASP 205** 3 cr  
**CNC Turning Center Fundamentals**

This course introduces students to the history, theory, and workings of computer numerically controlled Turning Centers. The course provides a basic understanding of the required skills to program, set up, and operate computerized machine tools.

**MASP 221** 2 -10 cr  
**Basic Computer Numerical Control: Machine Shop**

Introduces students through hands-on experience to the basic operations of CNC machines. Working with computer controlled mills and lathes, basic machine functions are used to produce parts of various shapes that could not be easily made on conventional equipment.

*Prerequisite:* MASP 113 and MASP 210.

**MASP 222** 2-10 cr  
**Advanced Computer Numerical Control: Machine Shop**

Further the student in hands-on applications of CNC operations.

*Prerequisite:* MASP 221 or instructor permission.

## Manufacturing (MFG)

**MFG 105** 3 cr  
**Industrial Safety**

Provides instruction in general safety related to personal protection, work areas, hand tools, material handling, electrical, welding and cutting, hazardous materials, fire prevention, ladders, basic power tools and basic rigging.



**MFG 110** 4 cr

**Project Management**

The course is an introduction to the theory of project development procedures. The concepts used for project management will include scheduling by means of the critical path method. The fundamentals of CPM will be presented and the concepts applied with software used in industry. Basic job estimating theory will be presented and applied using current industrial software.

**MFG 115** 5 cr

**Manufacturing Processes**

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.

**MFG 120** 4 cr

**Quality Assurance**

Provides the student with a comprehensive introduction to the principles and purpose of Quality Assurance Management in industry. The student will also gain basic understanding of the quality control tools used in industry, such as standard deviation, histograms, distribution curves, etc.

**MFG 130** 5 cr

**Materials Science**

**NSA**

Material Science is a study of the nature, structure, characteristics, and properties of natural and synthetic materials used in contemporary industry. Emphasis will be placed on understanding how the structure and properties of industrial influence the selection of primary materials and their conversion into useful products.

**MFG 140** 4 cr

**Applied Hydraulics**

Covers basic problems of hydraulics, fluids, power, hydraulics actuators, controls, pressures and circuits, and principles of industrial applications.

*Prerequisite:* Math 091 or higher or instructor permission.

**MFG 205** 5 cr

**Work Teams in Industry**

Describes the interpersonal skills, teamwork and organized problem solving necessary for employees in the pulp and paper industry. Students will practice skills necessary to succeed in the workplace.

**MFG 210** 4 cr

**Statics**

Introduces force systems and the analysis of structures, fluid static systems, and machinery using graphical techniques, right triangle trigonometry, and elementary algebra. Topics include vector notation, equilibrium, moments, couples, resultants, trusses, frames,

center of mass, beams, and friction.

*Prerequisite:* MATH 092 or concurrent enrollment in MATH 076 (Math Lab), or instructor permission.

**MFG 230** 4 cr

**Computer Integrated Manufacturing**

Introduces the student to the basic concepts of Computer Integrated Manufacturing and provides a foundation for applying those concepts in actual industrial situations. The course also introduces the student to CAD/CAM concepts and their function in the design and manufacturing process. Students will use specialized software to design parts, simulate the machining process, and observe the production of actual machine parts.

*Prerequisite:* DRFT 107.

**Math (MATH)**

**MATH 070** 5 cr

**Review of Math Fundamentals**

This course provides the student with a review of arithmetic operations on whole numbers, fractions and decimals. Covers applications of percent and proportions. To prepare the student for future math courses, introduces basic geometry and operations with signed numbers.

**MATH 076** 1 cr

**Right Triangle Trigonometry**

Includes theory and practical techniques of solving plane right triangles with the aid of a table of trigonometric functions. A background in algebra and geometry is helpful, but not mandatory.

*Prerequisite:* MATH 070 with a grade of C or better.

**MATH 091** 5 cr

**Pre-Algebra**

This course is intended for students who need an exposure to or a review of pre-algebra concepts. It includes operations on signed numbers, algebraic expressions, solving and using simple equations, ratio and proportions, exponents, and measurement. Topics from elementary geometry, statistics and an introduction to graphing in the Cartesian coordinate are also included.

*Prerequisite:* MATH 070 with a grade of C or better.

**MATH 092** 5 cr

**Elementary Algebra**

This course is an introductory course for students without high school credit in algebra or for those students needing to refresh their algebra skills. It includes properties of real numbers, linear equations, inequalities, graphing, polynomials, factoring, rational expressions, roots and radicals, quadratic equations, and an introduction to functions.

*Prerequisite:* MATH 091 with a grade of C or better



**MATH 093** 5 cr  
**Geometry**

Explores geometric sets, angles and triangles, proof, geometric inequalities, parallels, areas and volumes of plane and solid regions, similarity, circles, and spheres. Equivalent to one year of high school geometry. Designed for students with no geometry credits or for a review of geometry.

*Prerequisite:* MATH 092 with a grade of C or better, or one year of high school algebra.

**MATH 099** 5 cr  
**Intermediate Algebra**

This course reviews concepts covered in Elementary Algebra in greater depth, including algebraic operations, equations and inequalities, graphs of polynomials, exponents, roots and radicals, functions, and an introduction to complex numbers and logarithms. Note: MATH 099 is not accepted by all baccalaureate institutions. Check with your advisor for further information.

*Prerequisite:* MATH 092 with a grade of C or better.

**MATH 105** 5 cr  
**Mathematics for Health Sciences**

Includes a review of the basic arithmetic skills, including whole numbers and decimal numbers; fractions and percentages; powers of 10 and logarithms; introduction to basic algebraic concepts, including fractional equations and formulas; metric, apothecaries and household systems of measurement and calculations needed to determine dosages.

*Prerequisite:* MATH 070 with a grade of C or better.

**MATH 106** 5 cr  
**Industrial Mathematics**

Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry.

*Prerequisite:* MATH 091 with a C or better or instructor permission.

**MATH& 107 (was MATH 130)** 5 cr  
**Math In Society** NS

(was titled The Practical Art of Mathematics) Functions as a terminal course in mathematics for students whose major does not require further mathematics. The core topics of this course are logic, probability and statistics. Additional topics will be selected by the instructor. These topics could include geometry,

number systems, linear programming, set theory, number theory, functions, graph theory, topology, etc.

*Prerequisite:* MATH 099 with a grade of C or better.

**MATH 112** 5 cr  
**College Algebra** NS

This course prepares students for further study in science, engineering, mathematics and business. The course covers advanced techniques for solving equations and systems of equations. The analysis and graphing of functions including polynomial, rational, exponential and logarithmic functions is emphasized.

*Prerequisite:* MATH 099 with a grade of C or better.

**MATH 113** 5 cr  
**Trigonometry** NS

Provides preparation for further math studies, including calculus. Students review properties of real numbers, and then investigate angle measurement, trigonometric functions and their inverses, graphs of trig functions, solving trig equations, complex numbers, polar coordinates and DeMoivre's Theorem. Students study appropriate applications throughout the course.

*Prerequisite:* MATH 112 with a grade of C or better.

**MATH 121** 5 cr  
**Math for Elementary Teachers I**

Strengthens students understanding of problem solving, operations on whole numbers, decimals and fractions, and number theory. This is the first class in a two-part series designed to meet the Washington State University CTEP requirements for future teachers of grades K-8.

*Prerequisite:* MATH 099 with a grade of C or better. (Math& 107 (was Math 130) is recommended.)

**MATH 122** 5 cr  
**Math for Elementary Teachers II** NS

Strengthens students' understanding of the real number system, probability and statistics, geometry, measurement, functions and graphs. This is the second class in a two-part series designed to meet the Washington State University CTEP requirements for future teachers of grades K-8.

*Prerequisite:* MATH& 131 (was MATH 121) with a grade of C or better. (Math& 107 (was Math 130) is recommended.)

**MATH 125** 5 cr  
**Finite Math** NS

Acquaints students with linear equations and matrices, simplex method, sets and counting, probability, statistics, Markov processes, and game theory.

*Prerequisite:* MATH 112 with a grade of C or better.



<p><b>MATH&amp; 148 (was MATH 140)</b> <b>Business Calculus</b> (was titled Essentials of Calculus) 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. <i>Prerequisite:</i> MATH 112 or MATH 150 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>	<p><b>MATH 154</b> <b>Calculus IV</b> Continuation of Calculus III. Topics include partial derivatives, multiple integrals, and vector calculus. <i>Prerequisite:</i> MATH&amp; 153 with a grade of C or better.</p>	<p>3 cr <b>NS</b></p>
<p><b>MATH 150</b> <b>Precalculus</b> Prepares the student for the calculus sequence of courses. Students review real number systems, field properties, relations and functions, equations and inequalities, circular and inverse functions and graphs. Intended for the student with a strong background in high school mathematics. <i>Prerequisite:</i> MATH 112 and MATH 113 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>	<p><b>MATH 210</b> <b>Elements of Statistics</b> 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. <i>Prerequisite:</i> MATH 099 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>
<p><b>MATH&amp; 151</b> <b>Calculus I</b> (was titled Calculus and Analytic Geometry I) 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. <i>Prerequisite:</i> MATH 150 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>	<p><b>MATH 211</b> <b>Statistical Projects</b> 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 on page 31. <i>Prerequisite:</i> 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).</p>	<p>3 cr <b>NS</b></p>
<p><b>MATH&amp; 152</b> <b>Calculus II</b> (was titled Calculus and Analytic Geometry II) Introduces techniques of anti-differentiation 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. <i>Prerequisite:</i> MATH&amp; 151 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>	<p><b>MATH 215</b> <b>Discrete Structures</b> Acquaints students with mathematical concepts used in computer science. Topics can include logic, induction, combinatorics, recursion, analysis of algorithms and graph theory. <i>Prerequisite:</i> MATH 150 with a grade of C or better or instructor permission.</p>	<p>5 cr</p>
<p><b>MATH&amp; 153</b> <b>Calculus III</b> (was titled Calculus and Analytic Geometry III) Focuses on infinite series, partial derivatives, vector calculus and their applications. Incorporates the use of polar, cylindrical and spherical coordinate systems in applications of the calculus. <i>Prerequisite:</i> MATH&amp; 152 with a grade of C or better.</p>	<p>5 cr <b>NS</b></p>	<p><b>MATH 220</b> <b>Linear Algebra</b> 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. <i>Prerequisite:</i> MATH&amp; 151 with a grade of C or better or instructor permission.</p>	<p>5 cr <b>NS</b></p>



**MATH 240** **5 cr**  
**Differential Equations** **NS**

Introduces techniques of solving ordinary differential equations including the elementary methods used for first order differential equations, method of undetermined coefficients and variation of parameters for higher order equations. Includes techniques of solving systems of differential equations, the method of La Place transforms and series solutions to differential equations. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* MATH& 153 with a grade of C or better.

## Medical Assisting (MEDA)

**MEDA 101** **3 cr**  
**Medical Vocabulary I**

Provides a foundation for building a medical vocabulary including the study of prefixes, roots, suffixes, combining forms, and pronunciation. Emphasis is on using medical terms accurately in documenting and reporting patient care procedures.

**MEDA 102** **3 cr**  
**Medical Vocabulary II**

Continues the focus of MEDA 101 incorporating actual medical records and demonstrating how medical terminology is used in the clinical setting. Electronic media are used.

*Prerequisite:* MEDA 101 or BTEC 181.

**MEDA 120** **5 cr**  
**Survey of Human Anatomy and Physiology**

Introduces students to such fundamental biological principles as the cell and metabolism, then progresses through tissues to human organ systems including respiratory, circulatory, digestive, reproductive, immune, nervous, musculoskeletal, urinary and sensory organs.

*Prerequisite:* Competency of ENGL 100 and MATH 070, and acceptance into the Medical Assisting program.

**MEDA 121** **1 cr**  
**Healthcare Law**

Introduces the legal relationships of physicians and patients, professional liability, physician's public duties, and the role of medical office personnel in risk management. Covers the basic principles of psychology, which includes the developmental stages of the life cycle along with heredity, cultural, and environmental influences on behavior. Includes mental health issues and treatments.

*Prerequisite:* ENGL 100 and MATH 070, and current enrollment in the Medical Assisting program.

**MEDA 122** **2 cr**  
**Healthcare Ethics and AIDS Education**

Introduces business structures in health care and the different

medical specialties as well as standards of conduct, individual responsibilities, and professional attitudes necessary for medical office personnel. Examines ethical issues relating to health care. Provides seven hours of AIDS education, which meets state requirements.

*Prerequisite:* ENGL 100, MATH 070, MEDA 121, and current enrollment in the Medical Assisting program.

**MEDA 145** **4 cr**  
**Medical Laboratory Techniques**

Provides students with skills necessary to work in a physician's office laboratory. Focuses on quality control, record keeping, specimen collection, processing and disposal, urinalysis, hematology, blood chemistry, immunology, and microbiology. Students enrolled in this course must show documentation for the hepatitis B vaccine series.

*Prerequisite:* MEDA 120 or BIOL 221 and BIOL 222, ENGL 100 or higher, and current enrollment in the Medical Assisting program

**MEDA 146** **2 cr**  
**Invasive Procedures**

Provides students the knowledge and helps them develop the expertise to perform and document phlebotomy and intradermal injections. This course is part of the educational requirement for categories A, C, and E of the Law relating to Health Care Assistants, teaches to the scope of practice according to this law. Students enrolled in this course must show documentation for the hepatitis B vaccine series.

*Prerequisite:* MEDA 120 or BIOL 221 and BIOL 222, MATH 105, ENGL 100 or higher, and current enrollment in the Medical Assisting Program.

**MEDA 161** **3 cr**  
**Examining Room Procedures I**

Gives students 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 technique. Explains and discusses OSHA standards for handling biohazardous materials along with first aid and medical emergencies.

*Prerequisite:* ENGL 100 and MATH 070, and current enrollment in the Medical Assisting program.

**MEDA 162** **3 cr**  
**Examining Room Procedures II**

Builds on competencies developed in MEDA 161, necessary for assisting a health care provider in a clinical setting. Focuses on electrocardiography; specialty procedures, safety in radiography; nutrition in health and disease, dosage calculations, and advanced patient screening techniques.

*Prerequisite:* BTEC 101, MATH 105, MEDA 120 or BIOL 221 and BIOL 222, MEDA 161, and current enrollment in the Medical Assisting program.



**MEDA 164** 1 cr

**Medication Administration and Injections**

Provides students the knowledge and helps them develop the expertise to administer and document oral, subcutaneous, intramuscular, intradermal, otic, ophthalmic, and rectal medications. This course is part of the educational requirement for categories A, C, and E of the state law relating to Health Care Assistants, and teaches to the scope of practice outlined in this law.

*Prerequisite:* MEDA 101 or BTEC 181; MEDA 120 or BIOL 221 and BIOL 222 ; MATH 105, MEDA 161 and current enrollment in the Medical Assisting program.

**MEDA 165** 3 cr

**Medications in Medical Assisting & Diseases**

Develops an understanding and knowledge of common diseases and pathology. Students will become knowledgeable about diagnostic and treatment modalities, and become efficient in using drug reference materials. This course is part of the educational requirement for categories A, C, and E of the state law relating to Health Care Assistants, and teaches to the scope of practice outlined in this law.

*Prerequisite:* MATH 105, MEDA 120 or BIOL 221 and BIOL 222, MEDA 161 and 162 and current enrollment in the Medical Assisting program.

**MEDA 190** 6 cr

**Medical Assisting Externship**

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.

**MEDA 195** 1 cr

**Medical Assisting Seminar**

Brings together students currently in externships to discuss issues as they arise in the work place. Also provides an opportunity to introduce advanced topics in medical assisting or healthcare, and to augment those subjects covered with guest speakers. Discussion and practice for the AAMA/AMA certification exam is included.

*Prerequisite:* All previous MEDA courses

## Music (MUSC)

**MUSC 100** 5 cr

**Fundamentals of Music** H

Introduces music through investigation of melodic, rhythmic, and harmonic structure, and emphasizes development of basic concepts and skills in music through performance on appropriate instruments, such as tonebells, recorders, and guitars.

**MUSC 101, 102, 103** 5 cr

**Theory and Musicianship** H

Covers fundamentals, including keys, clefs, scales, intervals & triads, four-part-writing in root position & inversions; non-harmonic tones; the melodic line, major & minor keys, rhythm & syncopation; introduction to diatonic seventh chords; secondary dominants; modulation; analysis & keyboard harmony; and creative writing. Sight singing, dictation, & ear training are included.

**MUSC& 105 (was MUSC 110)** 2, 3 or 5 cr

**Music Appreciation** H

Includes history, development of music, and music appreciation. Part of the course is the study of the music of foreign cultures. Lectures, readings, and recordings provide students with background for understanding and appreciation of significant musical styles of many cultures and historical periods. Meets the associate's degree cultural diversity requirement.

**MUSC 106, 107, 108, 206, 207, 208** 2 cr

**Group Piano Instruction**

Offers study of scales, intervals, chords, and simple exercises in improvisation for those who want basic keyboard skills. Students may enroll any quarter at any level.

**MUSC 111, 112, 113** 1 cr

**Computer Assisted Theory Laboratory**

Supplements the musicianship portion of the MUSC 101,102,103 coursework. Covers terminology, scale construction and interval construction, including aural practice in harmony, rhythm and melody.

**MUSC 116, 216** 1 cr

**Musicum Practicum**

Students attend and participate in weekly concerts of popular music presented by musical ensembles/soloists. Students will critique the musical pieces that are presented, including appropriateness of style (interpretation), musical effect, technique, musicianship and stage deportment of the performers.

*Prerequisites:* None, but students should be prepared to perform publicly either as a member of a musical ensemble or as a soloist.



**MUSC 117** 2–5 cr  
**Music Cultures of the World** H

Introduces the music of non-Western cultures. Readings, and recorded selections on CDs provide students with background for understanding and appreciation of music cultures selected from Native America and/or Black America and/or Southeast Europe and/or Latin America. Meets the associate's degree cultural diversity requirement.

**MUSC 119** 5 cr  
**American Music** H

Surveys music in American life from an historic and stylistic perspective in a non-technical method. Contributions of various cultures to the music of the United States are included, with emphasis on contemporary classical and popular idioms. Meets the associate's degree cultural diversity requirement.

**MUSC 126, 127, 128, 226, 227, 228** 1 cr  
**Applied Music**

Includes one individual half-hour lesson per week. No fee is charged when lessons are provided by regular faculty. Students who study with other teachers make their own financial arrangements and pay their teachers directly.

A-Piano; B-Brass; G-Guitar; O-Organ; P-Percussion; S-String; V-Voice; W-Woodwind.

*Prerequisite:* Instructor permission.

**MUSC 130** 2 cr  
**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. The course may be repeated for credit up to seven quarters.

*Prerequisite:* Audition or approval by instructor.

**MUSC 134** 2-5 cr  
**Chamber Ensemble** H, P

Offers rehearsal and performance of standard chamber music from the seventeenth through twentieth centuries. Students may form ensembles or work individually with the instructor. The course may be repeated for credit up to seven quarters.

B-Brass; W-Woodwind; E-Mixed Ensemble; P-Percussion.

*Prerequisite:* Instructor permission.

**MUSC 135** 1 cr  
**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 140** 2 cr  
**Concert Choir** H, P

Includes performing at college convocations, local organizations, college Christmas programs, and a spring concert. Participation in all performances and activities is required. Various styles of choral literature are studied.

The course may be repeated for credit up to seven quarters.

*Prerequisite:* Instructor permission.

**MUSC 144** 2 cr  
**Vocal Ensemble** H, P

Offers performance of selected music from many types of choral idioms in a small vocal ensemble. The course includes performing at local organizations, departmental concerts, and, usually, a spring tour. Participation in all activities and performances is required. The course may be repeated for credit up to seven quarters. A-Chamber Singers; B-Jazz Vocal Ensemble.

*Prerequisite:* Instructor permission.

**MUSC 145** 1 cr  
**Beginning Voice**

Presents beginning vocal instruction, including development of basic skills, tone production, breathing, diction, rhythm, song interpretation, and song repertoire. The course may be repeated for credit up to seven quarters.

**MUSC 150** 2 cr  
**Symphonic Band** H, P

Offers rehearsal and performances of standard concert band repertoire. Activities of this college/community band include performances for special civic events in community and public concerts. The course may be repeated for credit up to seven quarters.

*Prerequisite:* Instructor permission.

**MUSC 161** 5 cr  
**Digital Audio I**

Students will study the theories and mechanics of recording audio signals to a digital medium. Students will begin to assemble the components of a final recording portfolio. Lab is included.



- MUSC 162** 5 cr  
**Digital Audio II**  
 Continued study of the theories and mechanics of recording audio signals to a digital medium. Emphasis on microphone techniques and applying technology to the acoustic realm and the effects of digital translation. Components will accumulate in the final recording portfolio. Lab is included.  
*Prerequisite:* Music 161.
- MUSC 163** 5 cr  
**Digital Audio III**  
 Continued study of the theories and mechanics of recording audio signals to a digital medium. Students will create the initial mix of their final multi-track recording project, which will be further refined and completed during the second year of the program. Lab is included.  
*Prerequisite:* Music 162.
- MUSC 170** 2 cr  
**Jazz Improvisation**  
 Instructs instrumental improvisation for dance combo, jazz ensemble, and accompaniment. Rhythm section, brass, and single reed instruments are emphasized.  
*Prerequisite:* Music 101 or instructor permission.
- MUSC 181** 3 cr  
**Contemporary Musicianship and Applications I**  
 The course introduces students to music theory and musicianship as related to popular (American) music. Included is basic ear training in musical intervals, triads, seventh chords, rhythm and meter. Introduction to arranging and timbre of non-transposing popular music instruments.  
*Prerequisite:* Music 100.
- MUSC 182** 3 cr  
**Contemporary Musicianship and Applications II**  
 This course integrates music theory and musicianship. This course continues the development of musicianship and applications from MUSC 181.  
*Prerequisite:* MUSC 181.
- MUSC 200** 2 cr  
**Beginning Composition**  
 Offers study of notational, formal, melodic, harmonic, rhythmic, textural, dynamic, and expressive aspects of musical composition for the beginner including special study of the relationship of lyrics to melody. One-hour lecture class, plus weekly small group lessons.
- MUSC 201, 202, 203** 3 cr  
**Advanced Theory**  
 Includes modal theory; counterpoint; advanced modulation; altered chords; borrowed chords; secondary dominants; augmented sixth chords; the Neapolitan sixth; chords of the ninth, eleventh, and thirteenth; chromatic harmony; twentieth-century developments; analysis; composition; written work; and basic score reading.  
*Prerequisite:* MUSC 201 – Concurrent enrollment in MUSC 211; MUSC 202 – Concurrent enrollment in MUSC 212; MUSC 203 – Concurrent enrollment in MUSC 213.
- MUSC 209** 5 cr  
**The Blues Culture** **H**  
 Studies the perception and analysis of musical style as related to blues music. This course focuses on the chronology and cultural context of the blues from African sources through blues expansion, including its influence on American popular music. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.
- MUSC 211, 212, 213** 1 cr  
**Computer Assisted Theory Laboratory**  
 Supplements the musicianship portion of the MUSC 201, 202, and 203 course work. Includes melodic, harmonic, and rhythmic dictation drills at advanced levels.  
*Prerequisite:* MUSC 211 – Concurrent enrollment in MUSC 201; MUSC 212 – Concurrent enrollment in MUSC 202; MUSC 213 – Concurrent enrollment in MUSC 203.
- MUSC 261** 5 cr  
**Advanced Audio Production I**  
 Mix-down of multi-track project begins. Students will begin to assemble the components of a final recording portfolio. Lab is included.  
*Prerequisite:* MUSC 163.
- MUSC 262** 5 cr  
**Advanced Audio Production II**  
 Continued study of the theories and mechanics of recording audio signals to a digital medium. Introduction to MIDI, MMC, SMPTE, synthesis and digital sampling. Use of these concepts in a multi-track environment prior to final mix-down. Creation of final pre-mastered stereo image. Lab is included.  
*Prerequisite:* MUSC 261.
- MUSC 263** 5 cr  
**Advanced Audio Production III**  
 Application of final mastering processes and promotional material to CD for portfolio presentation. Students will finish creating their final recorded work, which will be presented in a public performance. Lab is included.  
*Prerequisite:* MUSC 262, Co-requisite: MUSC 284.



**MUSC 281** 3 cr  
**Contemporary Musicianship and Applications III**

This course continues the study of music theory and musicianship as related to popular (American) music, reviewing and building on the concepts/skills developed in MUSC 181 and MUSC 182. Included are melodic dictation, extended and altered chords, non-chord tones, rhythmic dictation & notation, and a survey of pop/rock music from c. 1950–1970.

*Prerequisite:* MUSC 182.

**MUSC 282** 3 cr  
**Contemporary Musicianship and Applications IV**

This course continues the study of music theory and musicianship as related to popular (American) music, reviewing and building on the concepts/skills developed in MUSC 281. Included are song-writing, harmonic progressions, rhythm dictation, and trends in popular music since the 1970's.

*Prerequisite:* MUSC 281.

**MUSC 284** 3 cr  
**AAS Degree Project**

The audio production program culminates with this course. Students complete their final portfolio, which includes their master CD, all pertinent documentation, and a business and marketing plan. The final examination is a public presentation of their completed CD with appropriate discussion and critique.

*Prerequisites:* MUSC 262 and MUSC 282, Co-requisite: MUSC 263.

**MUSC 296, 297, 298** 3 cr  
**History of Music**

Studies history and development of western art music from Middle Ages to the present and analyzes compositions from the various musical style periods.

*Prerequisite:* MUSC 103.

## Nursing (NURS)

**NURS 090** 8 cr  
**Nursing Assistant**

Provides the content and experiences for students to achieve mastery of the state-defined competencies required to assist in giving basic nursing care to residents/clients under the supervision of a licensed nurse.

**NURS 101** 5 cr  
**Nursing Foundations**

Explores concepts that form the foundation of practice as a licensed nurse in the role of caregiver, collaborator or care, decision-maker, communicator, teacher, and professional.

*Prerequisite:* BIOL 221, PSYC& 100 (was PSYC 111), MATH 099, all with a grade of C or higher. Concurrent enrollment or prior completion of BIOL 222.

**NURS 102** 5 cr  
**Basic Nursing I**

Builds on previously learned concepts in NURS 101 and introduces basic medical-surgical nursing care of clients with selected health challenges throughout the lifespan, including endocrine, respiratory, immune, cardiovascular, hematological, lymphatic, and musculoskeletal disorders.

*Prerequisite:* NURS 101 and NURS 111, and concurrent enrollment or prior completion of BIOL& 260 (was BIOL 257), all with a grade of C or higher.

**NURS 103** 5 cr  
**Basic Nursing II**

Builds on previously learned concepts in NURS 101 and NURS 102 and continues exploration of basic medical-surgical nursing care of clients with selected health challenges throughout the lifespan including gastrointestinal, genitourinary, neurological, acid-base, fluid and electrolyte, cancer, eye, ear and mental health disorders.

*Prerequisite:* Nursing 102 and 112; concurrent enrollment or prior completion of PSYC& 200 (was PSYC 205), all with a grade of C or higher.

**NURS 104** 5 cr  
**Family Nursing**

Builds on previously learned concepts from prior nursing courses and expands preparation for the role of the licensed nurse in the care of the family.

*Prerequisite:* Nursing 103 and 113; concurrent enrollment or prior completion of ENGL& 101 (was ENGL 101), all with a grade of C or higher.

**NURS 111** 5 cr  
**Nursing Foundations - Clinical**

Provides opportunities to apply knowledge gained in NURS 101 and to develop skills in the performance of nursing care in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional, with a focus on the adult client.

*Prerequisite:* BIOL 221, PSYC& 100 (was PSYC 111), MATH 099, all with a grade of C or higher. Concurrent enrollment or prior completion of BIOL 222.



<p><b>NURS 112</b> <span style="float: right;">5 cr</span>  <b>Basic Nursing I - Clinical</b>                      Provides opportunities to build on previously learned skills and apply knowledge gained in NURS 102 through the performance of nursing care in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional, with a focus on medical/surgical nursing care  <i>Prerequisite:</i> NURS 101 and 111.</p>	<p><b>NURS 201 (was NURS 211)</b> <span style="float: right;">5 cr</span>  <b>Advanced Comprehensive Nursing I</b>                      Builds on knowledge of nursing concepts and care gained at the basic level, focusing on comprehensive care of clients throughout the lifespan, in preparation for the role as a registered nurse. Topics include care of the client with cardiac, respiratory, renal, and behavioral health disorders.  <i>Prerequisite:</i> Completion of the LPN program; AH 101, 102, 131, and 132 or equivalent. Completion of or concurrent enrollment in CHEM&amp; 121 (was CHEM 111).</p>
<p><b>NURS 113</b> <span style="float: right;">5 cr</span>  <b>Basic Nursing II - Clinical</b>                      Provides opportunities to build on previously learned skills and apply knowledge gained in NURS 103 through continuing and expanding the performance of nursing care in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional, with a focus on medical/surgical nursing care.  <i>Prerequisite:</i> NURS 102 and 112.</p>	<p><b>NURS 202 (was NURS 212 and NURS 213)</b> <span style="float: right;">5 cr</span>  <b>Advanced Comprehensive Nursing II</b>                      Builds on concepts presented in NURS 201/221 and continues focusing on comprehensive care of clients throughout the lifespan, in preparation for the role as a registered nurse. Topics include care of the client with vascular, hematological, gastro-intestinal, and behavioral health disorders.  <i>Prerequisite:</i> NURS 201/221. Completion of or concurrent enrollment in SOC&amp; 101 (was SOCY 110) or ANTH&amp; 206 (was ANTH 207).</p>
<p><b>NURS 114</b> <span style="float: right;">5 cr</span>  <b>Family Nursing - Clinical</b>                      Provides opportunities to build on previously learned skills and apply knowledge gained in NURS 104 through expanding the performance of nursing care in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional, into care of the family.  <i>Prerequisite:</i> NURS 103 and 113.</p>	<p><b>NURS 203 (was NURS 214)</b> <span style="float: right;">5 cr</span>  <b>Advanced Comprehensive Nursing III</b>                      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 role issues are discussed.  <i>Prerequisite:</i> NURS 202/222.</p>
<p><b>NURS 121</b> <span style="float: right;">2 cr</span>  <b>Nursing Foundations—Review</b>                      Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 101 and NURS 111.</p>	<p><b>NURS 209</b> <span style="float: right;">1 cr</span>  <b>Nursing Process</b>                      Offers an overview to current nursing emphasizing nursing assessment and the development of nursing care plans utilizing the nursing process. Review of selected nursing skills and introduction of general policies of the LCC Nursing Department will be included.</p>
<p><b>NURS 122</b> <span style="float: right;">2 cr</span>  <b>Basic Nursing I—Review</b>                      Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 102 and NURS 112.</p>	<p><b>NURS 221</b> <span style="float: right;">5 cr</span>  <b>Advanced Comprehensive Nursing Clinical I</b>                      Provides opportunities to apply knowledge and concepts learned in NURS 201 to nursing practice, cultivate critical thinking, and develop skill in the performance of nursing care at the registered nurse level in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional. Acute care and community-based setting will be utilized.  <i>Prerequisite:</i> Completion of LPN program. AH 101, 102, 131, and 132 or equivalent. Completion of or concurrent enrollment in NURS 201.</p>
<p><b>NURS 123</b> <span style="float: right;">2 cr</span>  <b>Basic Nursing II—Review</b>                      Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 103 and NURS 113.</p>	
<p><b>NURS 124</b> <span style="float: right;">2 cr</span>  <b>Family Nursing —Review</b>                      Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 104 and NURS 114.</p>	



**NURS 222** 5 cr  
**Advanced Comprehensive Nursing  
 Clinical II**

Provides opportunities to apply knowledge and concepts learned in NURS 202 to nursing practice, advance critical thinking, and expand skill in the performance of nursing care at the registered nurse level in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional. Acute care and community-based setting will be utilized.

*Prerequisites:* NURS 201 and 221.

**NURS 223** 5 cr  
**Advanced Comprehensive Nursing  
 Clinical III**

Provides opportunities to apply knowledge and concepts learned in NURS 203 to nursing practice, reinforce critical thinking, and enhance skill in the performance of nursing care at the registered nurse level in the role of caregiver, collaborator of care, decision-maker, communicator, teacher and professional. Acute care and community-based setting will be utilized.

*Prerequisites:* NURS 202 and 222.

**NURS 231** 2 cr  
**Advanced Comprehensive Nursing I—  
 Review**

Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 201 and NURS 221.

**NURS 232** 2 cr  
**Advanced Comprehensive Nursing II  
 – Review**

Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 202 and NURS 222.

**NURS 233 (was NURS 225)** 2 cr  
**Advanced Comprehensive Nursing III  
 – Review**

Provides additional learning opportunities to enhance the knowledge and skills presented in NURS 203 and NURS 223.

## LPN2RN Online Program Classes

Lower Columbia College's online distance education LPN to RN nursing program was developed to enable working LPNs to return to college. The program can be completed on a full-time or part-time basis. During Fall, Winter, and Spring quarters, the program will provide short, self-paced theory courses. A traditional clinical session is offered summer quarter. For more information, go to [lowercolumbia.edu/lpn2rn](http://lowercolumbia.edu/lpn2rn). Each of the nursing classes below is open only to admitted LPN to RN students.

**NURS 240** 3 cr  
**Management of Care**

Provides an introduction to Registered Nurse practice. Concepts of leadership and management will be included. Nursing delivery systems, standards of care, quality management, and evidence-based practice will be described. The course will culminate with an in-depth review and application of the nursing process. First in 9-part course sequence.

*Prerequisites:* Admission to LERN program.

**NURS 241** 3 cr  
**Safe, Effective Care Environment**

Provides the student with the skills to promote achievement of patient outcomes by providing and directing nursing care that enhances the care delivery setting in order to protect patients, families, significant others, and other health care personnel. Topics include safety, infection control, health promotion, and health maintenance. Second in 9-part course sequence.

*Prerequisites:* NURS 240 or concurrent enrollment.

**NURS 242** 3 cr  
**Health Throughout the Lifespan**

Provides the student with the ability to direct nursing care that incorporates understanding of expected growth and development principles, prevention and/or early detection of health problems, and strategies to achieve optimal health for patients across their lifespan. Third in 9-part course sequence.

*Prerequisites:* NURS 241 or concurrent enrollment.

**NURS 243** 3 cr  
**Behavioral Health**

Provides the student with knowledge to direct nursing care that promotes and supports the emotional, mental, and social well-being of patients and their families. Fourth in 9-part course sequence.

*Prerequisites:* NURS 242 or concurrent enrollment.



**NURS 244** **3 cr**  
**Physiological Health I**  
 Using a body systems approach, this course provides the student with the opportunity to promote physical health and wellness throughout the lifespan by providing nursing care and comfort, reducing risk potential, and managing health problems. Topics include nursing management of the patient with disorders of the respiratory, cardiovascular, peripheral vascular and lymphatic, neurologic, urinary/renal, hepatobiliary/pancreatic, digestive/gastrointestinal systems and acid-base/fluid imbalance. Fifth in 9-part course sequence.  
*Prerequisites:* NURS 243 or concurrent enrollment.

**NURS 245** **3 cr**  
**Physiologic Health II**  
 Using a body system approach, this course continues to provide the student with the opportunity to promote physical health and wellness throughout the lifespan by providing nursing care and comfort, reducing risk potential, and managing health problems. Topics include nursing management of the patient with a disorder of the musculoskeletal, dermatologic, immunologic, metabolic/endocrine, hematologic, reproductive, visual/auditory systems and cancer. Sixth in 9-part course sequence.  
*Prerequisites:* NURS 244.

**NURS 246** **2 cr**  
**Skills Laboratory**  
 Provides the student with practice opportunities in the skills laboratory. Seventh in 9-part course sequence.  
*Prerequisites:* NURS 244. May be taken concurrently with NURS 245.

**NURS 247** **10 cr**  
**Clinical Practicum**  
 Provides the student with opportunities to apply theoretical principles of nursing to practice in a variety of clinical healthcare settings. The focus of this course is on managing the nursing care of the patient experiencing complex acute and chronic illness. This course is designed to further the student's understanding of roles of the registered nurse in the role of caregiver, decision maker, user of information technology/communications, teacher, manager of care/collaborator, possessor of professional values/behaviors, developer of professional role, researcher, and leader. Eighth in 9-part course sequence.  
*Prerequisites:* NURS 246; SOC& 101 (was SOCY 110) or ANTH& 206 (was ANTH 207); CHEM& 121 (was CHEM 111).

**NURS 248** **5 cr**  
**Advanced Clinical Practicum**  
 Provides the student with opportunities to apply theoretical principles of nursing to practice in a clinical healthcare setting. The course is a comprehensive product of the nursing student's general education and nursing didactic and clinical experiences. Students are placed in selected healthcare settings in which they can practice the beginning role of the registered nurse. The course focuses on moving students toward autonomous professional nursing practice within a consistent clinical setting. Ninth in 9-part course sequence.  
*Prerequisites:* NURS 246; course offered sequentially after NURS 247 but may be concurrently enrolled.

## Oceanography (OCNG)

**OCNG 140** **3 or 5 cr**  
**Introduction to Oceanography** **NS, 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. Students may choose to take the course for 3 credits (lecture only) or for 5 credits (lecture and lab). Laboratory involves use of globes, charts and graphs, sediment and biological samples. A field trip may be required.

## Philosophy (PHIL)

**PHIL& 101(was PHIL 200)** **5 cr**  
**Introduction to Philosophy** **H**  
 Analyzes essential philosophical questions such as the one and/or many, what is truth, what is real being, etc. Pursues various Western attempts at their answers along with students' own personal approaches. This may be offered as a Capstone course. See Capstone prerequisites on page 31.  
*Prerequisite:* ENGL& 101.

**PHIL 120** **5 cr**  
**Critical Reasoning** **NS**  
 Introduction to critical reasoning emphasizing concepts and methods useful for practical analysis of arguments in everyday contexts including the exercise of symbolic reasoning through the analysis of meaning, syllogisms, logical diagrams, inductive and statistical inference, informal fallacies, argument structures. Specific emphasis will be placed on the evaluation of claims of scientific research and epistemology.  
*Prerequisite:* ENGL& 101.



**PHIL 210****Ethics**

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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101.

5 cr

**H****PHIL 260****Philosophy of Religion**

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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* ENGL& 101.

5 cr

**H**

## Physical Education (PHED)

**PHED 110, 210****Circuit Training**

Develops the basic components of physical fitness for students through participation in an aerobic circuit weight training program. The super-circuit aerobics program utilizes a combination of endurance and strength machines to provide one of the most effective conditioning methods known for developing baseline levels of physical fitness.

*Prerequisites:* for PHED 210-PHED 110, 126, 128, 140, 141 or 146.

2 cr

**PHED 121****Beginning Foil Fencing**

Presents the skills, strategies, rules and physical conditioning for the competitive or leisure pursuit of fencing.

1 cr

**PHED 122****Intermediate Foil Fencing**

Advancement of the skills, strategies, rules and physical conditioning beyond the basics for competitive or leisure pursuit.

*Prerequisite:* PHED 121 or instructor permission.

1 cr

**PHED 126, 226****Aerobic Exercise**

Guides students through rhythmical and continuous exercise performed to music. Every student, no matter what age or body type, will be provided the opportunity to improve their cardio-respiratory endurance through participation.

1-2 cr

**PHED 128, 228****Weight Training**

Improves strength, physical conditioning, and performance through correct use of universal equipment, free weights and cardio-respiratory equipment. Emphasis will be on health and fitness education. Each student will design a program specific to his or her goals for the quarter.

1-2 cr

**PHED 130, 230****Swimming**

Provides instruction of the basic swimming strokes, personal safety skills and conditioning programs for muscular and cardiovascular endurance of the swimmer. Students will attend this class at the Mark Morris pool.

1 cr

**PHED 140, 240****Basketball—Men**

Provides opportunity for students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.

1 cr

**PHED 141, 241****Basketball—Women**

Provides an opportunity for the students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.

1 cr

**PHED 145****Softball Coaching Theory**

Addresses philosophy, technique, strategy, and knowledge. Progresses from basic theories through sophisticated situational theories and strategies. The course is designed for any level of play or coach in fast-pitch softball.

3 cr

**PHED 146, 246****Fastpitch Softball—Women**

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.

1 cr



<p><b>PHED 147, 247</b>  <b>Applied Fastpitch Softball—Women</b>                      Provides students the opportunity to demonstrate fastpitch softball skills, strategies, rules of play and participation in a softball-conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>	<p><b>PHED 167, 267</b>  <b>Applied Volleyball</b>                      Gives students an opportunity to demonstrate volleyball skills, strategies, and rules of play and to participate in a volleyball-conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>
<p><b>PHED 149, 249</b>  <b>Applied Soccer—Women</b>                      Provides students the opportunity to demonstrate soccer skills, strategies, rules of play, and to participate in a conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>	<p><b>PHED 171</b>  <b>Prevention and Care of Athletic Injuries</b>                      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.</p>	<p>3 cr</p>
<p><b>PHED 152, 252</b>  <b>Personalized Fitness</b>                      Requires students to plan and execute their own exercise program designed specifically to meet their goals and objectives as it relates to physical fitness. Students may utilize Lower Columbia's exercise facility or may choose to participate in off-campus activities. A contract with the instructor will initiate the class and written workout logs are required on a weekly basis throughout the quarter.</p>	<p>1-2 cr</p>	<p><b>PHED 190</b>  <b>Baseball Coaching Theory</b>                      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.</p>	<p>3 cr</p>
<p><b>PHED 160, 260</b>  <b>Baseball</b>                      Enables students the opportunity to learn basic baseball skills, strategies and rules of play. A strict baseball-conditioning program will be emphasized. Fall quarter.</p>	<p>1 cr</p>	<p><b>PHED 192</b>  <b>Basketball Coaching Theory</b>                      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.</p>	<p>2 cr</p>
<p><b>PHED 162, 262</b>  <b>Applied Baseball</b>                      Provides students the opportunity to demonstrate baseball skills, strategies, rules of play and to participate in a baseball conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>	<p><b>PHED 282</b>  <b>Water Safety Instruction</b>                      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.</p>	<p>3 cr</p>
<p><b>PHED 164, 264</b>  <b>Applied Basketball—Men</b>                      Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>	<p><b>PHED 284</b>  <b>Lifeguard Training</b>                      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.</p>	<p>3 cr</p>
<p><b>PHED 165, 265</b>  <b>Applied Basketball—Women</b>                      Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program.  <i>Prerequisite:</i> Instructor permission.</p>	<p>2 cr</p>		



## Physics (PHYS)

**PHYS& 100** 5 cr

### Physics: Non-Science Major

(was titled Concepts of Physics)

**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.

**PHYS 101** 5 cr

### Introductory Physics

**NSL**

Provides the first quarter of a sequence for students in various health science, technology, and pre-professional areas. Student-initiated motion studies introduce the fundamental principles of mechanics through studies of kinematics, Newton's Principles, energy and momentum conservation principles, and their rotational analogues. Students participate in supporting small group laboratory investigations.

*Prerequisite:* MATH 099 and MATH 076 (Math Lab) or equivalent working knowledge of elementary algebra and right triangle trigonometry, or instructor permission.

**PHYS 102** 5 cr

### Introductory Physics

**NSL**

Incorporates both thermodynamics and electromagnetism, including active student investigations of temperature, heat and thermal energy, entropy, the properties of simple electric and magnetic fields, and simple AC and DC circuits. Classroom activities help students connect the nature and role of fundamental principles in physics with real everyday operations of those principles. Students learn operation and use of contemporary instrumentation in lab investigations.

*Prerequisite:* PHYS 101, MATH 099 and MATH 076 (Math Lab) or instructor permission.

**PHYS 103** 5 cr

### Introductory Physics

**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. Student lab investigations feature landmark experiments of the 20th Century.

*Prerequisite:* PHYS 102 or instructor permission.

**PHYS 210** 5 cr

### The 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. This course is cross-listed with ENVS 210 and ENGR 210. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* Algebraic, writing, and presentation skills; a previous distribution science course (e.g., PHYS& 100) would be helpful.

**PHYS 251** 5 cr

### General Physics

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 in creases during the term.

*Prerequisite:* High school or college level physics course, completion of, or concurrent enrollment in ENGR 106 (was ENGR 121), MATH& 151, or instructor permission.

**PHYS 252** 5 cr

### General Physics

Incorporates study of thermodynamics and electromagnetism, and includes student investigations of temperature, heat and thermal energy, entropy and absolute zero, simple static and time-varying electric and magnetic fields, and AC and DC circuits. Classroom activities help students connect the sweeping power of fundamental principles with real everyday engineering physics applications. Students operate and utilize contemporary instrumentation in lab investigations.

*Prerequisite:* PHYS 251, MATH& 152 or instructor permission.

**PHYS 253** 5 cr

### General Physics

Incorporates wave physics and topics from contemporary physics through active student investigation of mechanical and electromagnetic waves, geometrical and physical optics, relativistic mechanics, Bohr's hydrogen atom, simple wave mechanisms, and nuclear and elementary particle physics as time permits. Small group lab projects support these contemporary topics.

*Prerequisite:* PHYS 252, completion of, or concurrent enrollment in MATH& 153 is highly recommended, or instructor permission.



## Political Science (POLS)

**POLS 107** 5 cr  
**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.

**POLS& 202 (was POLS 106)** 5 cr  
**American Government** SS

(was titled American Political Institutions)  
 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.

**POLS& 203 (was POLS 108)** 5 cr  
**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.

**POLS 220** 5 cr  
**The Law and 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.

## Psychology (PSYC)

**PSYC& 100 (was PSYC 111)** 5 cr  
**General Psychology** SS

(was titled Introduction to General Psychology)  
 Studies the science of behavior and fosters understanding of human development, learning, motivation, emotions, reactions to frustration, mental health and therapy, perception, and personality.

**PSYC 140** 3 cr  
**Introduction to Sport Psychology**

Emphasizes the psychological factors affecting individual behavior as it relates to sport performance and provides student athletes the resources to better understand, predict, and modify competitive sport performance as a result.

**PSYC& 200 (was PSYC 205)** 5 cr  
**Lifespan Psychology**

(was titled Developmental 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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* PSYC& 100 (was PSYC 111) or instructor permission.

**PSYC 204** 5 cr  
**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* PSYC& 100 (was PSYC 111) or instructor permission.

**PSYC 209** 5 cr  
**Interviewing Techniques**

Studies techniques of active listening and responding, and emphasizes the development of communication skills for those considering the social service field or related helping professions.

*Prerequisite:* PSYC& 100 (was PSYC 111).

**PSYC 214** 5 cr  
**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* PSYC& 100 (was PSYC 111) or instructor permission.

**PSYC& 220 (was PSYC 220)** 5 cr  
**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. This may be offered as a Capstone course. See Capstone prerequisites on page 31.

*Prerequisite:* PSYC& 100 (was PSYC 111) or instructor permission.



**PSYC 240**

3 cr

**Compulsive Sexual Behavior**

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. Cross-listed with CDS 240.

## Pulp & Paper Manufacturing Technology (PULP)

**PULP 101 (was PULP 106)**

3 or 5 cr

**Introduction to Pulp & Paper Technology**

Current pulping and bleaching processes used during the production of various types of paper products. Basic forestry practices, wood properties and pre-pulping operations are explored. Overview of the pulp and paper business will be covered. Variations in the preparation of pulp needed for different paper products are identified. Students may choose to take the course for 3 credits (lecture only) or for 5 credits (lecture and lab).

**PULP 102 (was PULP 107)**

3 or 5 cr

**Paper Processing**

Explores current papermaking techniques and equipment used in the production of various types of paper and paperboard products. Basic principles of paper machine operation and the relationship of papermaking to the pulping and bleaching and paper conversion stages of the manufacturing process are also explored. Students may choose to take the course for 3 credits (lecture only) or for 5 credits (lecture and lab).

*Prerequisite:* PULP 101.

**PULP 104 (was PULP 108)**

3 cr

**Survey of Paper Conversion Techniques**

Provides a general overview of the processes used to convert paper into various types of paper and paperboard products. Techniques used in the production of newsprint, tissue, boxes, bags, and various types of specialty paper, as well as the relationship of paper conversion to pulping, bleaching, and papermaking are explored. Also included is an overview of printing processes used in the production of various products.

**PULP 214**

5 cr

**Introduction to Process Technology**

Provides basic orientation for operators in the pulp and paper industry. Introduces many of the terms encountered in the workplace. Topics include operator roles, responsibilities, expectations, terminology, chemical process, basic plant principles, applied safety, general material handling, flow diagrams and plant organization. Will include labs on paper testing and dynamic process control simulations.

*Prerequisite:* MATH 099.

**PULP 224**

5 cr

**Maintenance in Pulp & Paper**

Provides instruction in maintenance procedures as applied to the pulp and paper industry. Students will receive instruction on piping systems, boilers, valves, pumps and heat exchanges. Course will also cover proper chemical handling procedures, lubricating techniques, bearing maintenance, surface preparation practices and alignment procedures.

**PULP 225**

5 cr

**Paper Chemistry and Environment**

Addresses the chemical recovery and environmental processes in the pulp and paper industry. Safety aspects will include personal safety and HAZCOM, along with government regulations. Topics will include emphasis on chemical recovery, wastewater treatment systems, air filtering systems, solid waste systems and organizations and operations of EPA and its significance to the pulp and paper industry.

## Sociology (SOC) (was SOCY)

**SOC& 101 (was SOCY 110)**

5 cr

**Introduction to Sociology****SS**

Studies principles of understanding human relationships. Various forms and processes of group interaction are analyzed, including primary groups, associations, and major institutions; urban and rural communities; intergroup and interclass relationships; structured and unstructured behavior; socialization of the individual; social organization and disorganization; and deviance and conformity to cultural patterns. Meets the associate's degree cultural diversity requirement.

**SOC 209 (was SOCY 209)**

5 cr

**Sociology and the Family****SS**

Provides study of the family as the basic societal institution. Several approaches are used including comparing past and present patterns, cultural variations of families, effects of social change upon the family, and a discussion of how the family might increase its own stability and best fulfill the needs of its members and society. This may be offered as a Capstone course. See Capstone prerequisites on page 31. Meets the associate's degree cultural diversity requirement.

*Prerequisite:* SOC& 101 (was SOCY 110) or instructor permission.

**SOC 210 (was SOCY 210)**

5 cr

**Human Sexuality****SS**

Presents examination of the scientific research that has led to a better understanding of human sexuality in its anatomical, physiological, sociological, cultural, and psychological aspects. This may be offered as a Capstone course. See Capstone prerequisites on page 31.



## Spanish (SPAN)

**INDV 097** 2 cr

### **Spanish Grammar for Beginners: Present Tense Verbs**

Provides an individualized plan for students who need more time to master language, reading comprehension, and/or study skills as recommended by the instructor, student, and/or Learning Center supervisor. This course is graded on a pass/fail basis.

**INDV 098** 1 cr

### **Spanish Grammar for Beginners: Agreement of Nouns and Modifiers**

Enables understanding of grammatical agreement 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.

**SPAN 104** 3-5 cr

### **Introduction to Spanish in the Workplace**

Introduces Spanish, presenting realistic situations and specialized vocabulary needed for basic communication with Spanish speakers in the workplace. Personalized questions, grammar exercises, dialog activities, and role-playing provide students with numerous opportunities to apply points of language in a wide variety of practical contexts. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107).

**SPAN 105** 3-5 cr

### **Introduction to Spanish in the Workplace**

Builds vocabulary and introduces more complex points of language, including idioms, grammar, and, especially, pronunciation. Provides additional opportunities for telephone and face-to-face communication in workplace settings. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107).

*Prerequisite:* SPAN 104 or equivalent.

**SPAN 106** 3-5 cr

### **Spanish in the Workplace**

Accumulates vocabulary and introduces additional verb forms and pronoun usage, which are essential to clear oral communication. Enables further telephone and face-to-face communication with clients and co-workers whose principle language is Spanish. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107).

*Prerequisite:* SPAN 105 or equivalent.

**SPAN 107** 3-5 cr

### **Spanish in the Workplace**

Increases fluency, concentrating on effective communication (listening and speaking), self-expression, and literacy. Within a particular domain, students will learn to interact with clients and co-workers whose principal language is Spanish. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107).

*Prerequisite:* SPAN 106.

**SPAN 110** 3 cr

### **Introduction to Spanish Language and Culture** H

Surveys cultural attributes of the Spanish-speaking world, which includes Spain and the Americas. Provides an overview of language, art, literature, music, history, geography, and customs. Addresses contemporary issues pertaining to an intercultural world.

**SPAN 114** 3 cr

### **Introduction to Spanish Language and Culture: Study Abroad** H

Surveys cultural attributes of the Spanish-speaking world, which includes Spain and the Americas. Provides an overview of language, art, literature, music, history, geography, and customs. Addresses contemporary issues pertaining to an intercultural world through study abroad.

**SPAN& 121 (was SPAN 101)** 5 cr

### **Spanish I** (was titled Elementary Spanish) H

Introduces Spanish, emphasizing basic vocabulary and points of language used in contemporary Spanish-speaking cultures. Meets the associate's degree cultural diversity requirement.

**SPAN& 122 (was SPAN 102)** 5 cr

### **Spanish II** (was titled Elementary Spanish) H

Provides continuation of basic principles offered in SPAN& 121 (was SPAN 101). Accumulates vocabulary, reinforces basic grammar, and increases fluency. Meets the associate's degree cultural diversity requirement.

*Prerequisite:* SPAN& 121 (was SPAN 101) with a grade of C or better or two years of high school Spanish.

**SPAN& 123 (was SPAN 103)** 5 cr

### **Spanish III** (was titled Elementary Spanish) H

Provides further development of basic skills. Accumulates vocabulary, reinforces basic grammar, introduces new grammatical principles, and increases fluency. Meets the associate's degree cultural diversity requirement.

*Prerequisite:* SPAN& 122 (was SPAN 102) with a grade of C or better or three years of high school Spanish.



**SPAN& 221 (was SPAN 201)**

5 cr

**Spanish IV** (was titled Intermediate Spanish) **H**

Provides an intensive review of vocabulary and basic points of language included in the first year, introduces new points, develops communication problem solving skills, and builds an extensive vocabulary pertinent to contemporary social and cultural issues.

*Prerequisite:* For enrollment in second-year Spanish courses, students must complete first-year college level Spanish.

**SPAN& 222 (was SPAN 202)**

5 cr

**Spanish V** (was titled Intermediate Spanish) **H**

Continues to build communication skills, accumulate vocabulary, and increase fluency, with added emphasis on literacy.

*Prerequisite:* SPAN& 221 (was SPAN 201) or equivalent.

**SPAN& 223 (was SPAN 203)**

5 cr

**Spanish VI** (was titled Intermediate Spanish) **H**

Continues to build communication skills, accumulate vocabulary, and increase fluency, with added emphasis on literacy.

*Prerequisite:* SPAN& 222 (was SPAN 202) or equivalent.

**Speech (SPCH)****SPCH 104**

5 cr

**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.

**SPCH 109**

5 cr

**Intercultural Communication** **H**

Examines the intercultural aspects of the communication process. Emphasizes the significance of communicating a cross cultural lines in today's world, cultural identity, behaviors and values, historical context, language and nonverbal expression, intercultural transitions, and conflict. Focuses on the application of theory and skills designed to increase competence in intercultural communication. Meets the associate's degree cultural diversity requirement.

**SPCH 110**

5 cr

**Intro to Public Speaking** **HA**

Examines the planning, development, and delivery of speeches. Emphasis is given to effective structure and support of informational and persuasive messages, audience analysis, language use, verbal and nonverbal presentation skills, and listening. Self-critiques are also stressed.

**SPCH 126, 127, 128, 226, 227, 228**

2 cr

**Competitive Public Speaking**

Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two competitive intercollegiate tournaments.

**SPCH 136, 137, 138, 236, 237, 238**

2 cr

**Intercollegiate Debate**

Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.

**SPCH 204**

5 cr

**Small Group Communication** **H**

Principles and processes of small groups and development skills for participation and leadership in small group settings. Practice in problem solving, decision making, and information sharing. Includes analysis and evaluation of project-based small group work.

*Prerequisite:* ENGL& 101 or ENGL 102 or instructor permission.



**SPCH 205** 3 cr  
**Persuasion** **H**  
 Studies the art of persuasion, both its theory and practice, as an instrument to motivate human behavior. Students work with application of logical, emotional and ethical proof in the process of developing persuasive speeches.

**SPCH 210** 3 cr  
**Argumentation** **H**  
 Includes principles of argumentation, investigation, and analyses of propositions; location of issues; use and tests of evidence, reasoning, and logic; detection of fallacies; structure of arguments, including making briefs; and methods of refutation and rebuttal.

**SPCH 290** 1 cr  
**Forensic Management and Organization**  
 Provides instruction and practical experience in the setup, administration, and judging of forensics tournaments. Graded on a pass/fail basis.

## Technology Education (TECH)

**TECH 070** 5 cr  
**Introduction to Technical Reading/Writing**  
 Offers basic writing/reading skills for technical students. Skills include writing complete sentences, improving spelling, and using writing as a form of communication. Additionally, students will learn how to read technical materials effectively, expand vocabulary, and improve comprehension.

**TECH 090** 5 cr  
**Principles of Technology**  
 Explores the mechanical, fluid, electrical, and thermal systems on which modern technology operates. Hands-on, real-world lab activities are integrated with mathematics and physics instruction to provide an understanding of the units of force, work, rate, resistance, and energy associated with each system.

**TECH 100** 5 cr  
**Advanced Principles of Technology** **NSA**  
 Provides hands-on study of energy, power, and force transformers in mechanical, fluid, electrical and thermal energy systems. Includes a review of force, work, rate, and resistance. Students will learn through a combination of lab experiments and discussion of the physics and math related to each energy system. The application in industry of various concepts is also explored.  
*Prerequisite:* One year of high school principles of technology (certificate from instructor required), or TECH 090, or MATH 106 or higher

**TECH 170** 4 cr  
**Statistical Process Control**  
 Explores the use of statistical process control as a means of improving a process. Problem-solving techniques including brainstorming, Pareto diagrams, and cause and effect diagrams are also examined.  
*Prerequisite:* Recommended: MATH 106 or higher.

## Welding (WELD)

**WELD 105** 2-6 cr  
**Related Welding I**  
 Studies shop safety practices and common welding techniques for related curriculums. The common welding techniques will include oxy-acetylene cutting and brazing, electrode arc welding, and wire free welding.

**WELD 151** 2-6 cr  
**Introduction to Oxy-Acetylene**  
 Covers basic principles, procedures, and safety in using oxy-acetylene equipment. Mild steel rod, brazing rod, soldering, temperatures, metal testing, fluxes, expansion, contraction and dry cutting. Projects are assigned to give practice in making basic welds.

**WELD 152** 2-10 cr  
**Introduction to Arc Welding**  
 Studies basic principles, procedures, and safety in the use of welding equipment. Students must complete satisfactory vertical, flat, horizontal, and overhead welds using E6010. Projects are assigned to help develop student skills.

**WELD 158** 5 cr  
**Welding Theory and Fabrication**  
 Covers theoretical and practical applications of welding processes and metal fabrication. Work on project is required outside of class.  
*Prerequisite:* WELD 151, 152 or instructor permission.

**WELD 221** 10 cr  
**Wire Machine**  
 Presents a general overview of various metallic inert gas (MIG) welding machines, including instructions on stainless steel, mild steel, aluminum, flux core wire welding, and machine troubleshooting and setup problems/safety.  
*Prerequisite:* WELD 151, 152, 254, or instructor permission.



**WELD 222**

6 cr

**Advanced Wire Machine**

Prepares the student for successful employment in flux core wire welding. Emphasizes safety, care and use of equipment, types of testing (destructive and non-destructive), welding specifications and codes, welding procedures and qualification requirements, visual inspection, weld defects, and workmanship.

*Prerequisite:* WELD 151, 152, 221, 254, 256, or instructor permission.

**WELD 254**

2-10 cr

**Arc Welding**

Continues arc welding procedures, rods, symbols, and metal testing using E7018 and different alloy rods and sizes. Students also work towards AWS/WABO certification.

*Prerequisite:* WELD 152 or instructor permission.

**WELD 255**

2-10 cr

**Advanced Welding Processes**

Provides training opportunity with tungsten inert gas (TIG) and aluminum, mild steel, stainless steel, and pipe.

*Prerequisite:* WELD 151, 152, 254, 256, or instructor permission.

**WELD 256**

2-10 cr

**Advanced Welding Application**

Studies maintenance, repair and production welding and provides a testing program and a service course for those desiring to complete a certification test meeting AWS or WABO specifications.

*Prerequisite:* WELD 152, 254, or instructor permission.

**WELD 259**

2-10 cr

**Pipe Welding**

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 151, 152, 254, 255, 256, or current WABO or AWS card, or instructor permission.



## Grades & Credits

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

A	4.0 points per credit (exceptional performance)
A-	3.7 points per credit
B+	3.3 points per credit
B	3.0 points per credit (above average performance)
B-	2.7 points per credit
C+	2.3 points per credit
C	2.0 points per credit (average performance)
C-	1.7 points per credit
D+	1.3 points per credit
D	1.0 points per credit (minimal performance)
D-	.7 points per credit

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.

## Advanced Placement

Eligible students may be permitted to enroll in an advanced class without having taken the course normally preceding it. Eligibility for advanced placement, such as waiver of a required course, is determined based on the student's prior experience, parallel skills, and/or knowledge required to complete the course being waived. LCC also grants credit for completion of the College Board's Advanced Placement examinations. Contact the Registration Office at (360) 442-2370 for specific information.

## Audit

A student may audit any course for no credit upon payment of tuition and fees. Auditors are not required to take examinations, but may participate in course work. If you want to audit a class, you must

register as an auditor. Registered students wishing to change to audit status must follow the procedure for change to audit registration, including obtaining the instructor's written permission.

Senior citizens may audit courses at a reduced rate, on a space-available basis. Contact the Registration Office for details on the Senior Citizens' Waiver Program.

## Course Challenge

You could earn course credit at LCC without attending regular classes by challenging a course. To do this, you must pass a comprehensive examination and/or complete projects designated by the instructor. Permission to challenge a course is conditional and is based on the express permission of the full-time instructor who normally teaches the course. Challenges are not allowed for work previously taken in high school or college, or for a course the student has previously failed.

Challenged credits may be used to meet an appropriate graduation requirement, but are not accepted as part of the 24 credits in residence. If permission is given to challenge a course, the student must register for that course and pay regular course fees.

## Course Waiver

You may petition to have a course requirement waived, based on your prior educational or work experience. The current instructor of the course initially evaluates the request to waive a course, with final approval by the Vice President and Dean of Faculty.

At your request, the instructor submits a Course Waiver Form to the Vice President and Dean of Faculty. Once approved by the Vice President, it is sent to the Director of Enrollment Services/Registrar and recorded on the student's transcript. The course is recorded at the end of the student's transcript and labeled as "waived" with the appropriate credits. Waived courses and credits are not included in the student's GPA.

Waived courses may be used to satisfy any graduation requirement but may not be accepted as part of the 24 required credits in residence. Waived courses will not be recorded until a student has earned 12 credits in courses numbered 50 or higher. No fee is charged for Course Waivers. Transferability of waived courses is determined by the receiving institution.

## Final Exams

The Final Exam schedule is included in the printed quarterly course schedule and available online at [lowercolumbia.edu/kiosk](http://lowercolumbia.edu/kiosk)

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 and Dean of Faculty 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 and Dean of Faculty. Time changes, unanimously approved by the class, are acceptable.

### Full-Time/Part-Time Load

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

### Grade Forgiveness

If you are returning to LCC after an absence of five or more years, you are eligible for grade forgiveness once you complete at least 24 new credits at LCC, with a cumulative GPA of 2.5 or higher. Forgiveness applies only to courses taken before your return, you can only use forgiveness once, and you must choose entire quarters (not individual courses) for grade forgiveness. Courses will remain on your transcript, but old grades will be replaced with an "X" for expunged and will not be figured into your GPA. Contact the Registration Office for more information.

### Grade Report

Get your grades (unofficial transcripts) through the student information kiosk Website at <http://lowercolumbia.edu/kiosk>, using your Student ID Number and your global PIN (personal identification number) available from the Registration Office.

### Honors Lists

LCC recognizes students achieving notably high grades for any quarter. The President's List honors students earning 12 or more credits with a 3.80 or higher GPA for that quarter. The Dean's List honors those earning 3.25 to 3.79. If you qualify for either list, LCC will congratulate you by mail and release your name for publication.

### 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. Otherwise, the "I" remains on the transcript.

### Instructor-Initiated Withdrawal

If you do not attend any of the class sessions during the first five

instructional days of the quarter (i.e., you are absent for all of the scheduled class meetings) and do not contact the instructor regarding your absence in person, by phone, or by email, you may be administratively withdrawn by the class instructor. You will receive a grade of V (vanished) for the course.

### Pass/Fail Option

You may choose the pass/fail grading option through the first 10 days of each quarter. Formalize this choice 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. You may reverse your decision to enroll on a pass/fail basis by notifying the Registration Office in writing by the normal deadline to drop classes. Limitations on courses taken through the student-initiated pass/fail grading option include:

A maximum of five credits per quarter may be taken pass/fail.

A maximum of 15 "Pass" credits may be used toward completion of associate degree requirements.

Courses taken pass/fail may not be used to satisfy the communications, quantitative skills, core program, or distribution requirements for any associate degree at Lower Columbia College.

"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 normally so indicated in the class schedule or college catalog.

### Repeating a Course

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

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

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



## Academic Standards

### Academic Standards Committee

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

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

Petition forms are available in the Registration Office and the Office of the Vice President for Student Success. Completed forms should be directed to the Secretary of the Academic Standards Committee, who is the Administrative Assistant to the Vice President for Student Success.

### Student Academic Grievance Policy

LCC's Academic Grievance Policy protects your freedom of expression and protects you from improper, arbitrary or capricious academic evaluation.

If you believe you have been graded improperly and are unable to informally resolve the situation with your instructor, you may file a formal grievance with the Vice President for Student Success. More information and a copy of the Student Academic Grievance Policy are available from the Office of Student Success, (360) 442-2300.

### Satisfactory Academic Progress

Poor grades may bring you an academic warning, alerting you to low scholarship status and encouraging you to improve performance. The academic warning and suspension policies are:

A student who receives a quarterly GPA below 2.0 for any quarter will be placed on warning status.

A student who receives a quarterly GPA below 2.0 for two consecutive quarters and whose cumulative GPA is less than 2.00 will be suspended for academic reasons.

Suspended students are not allowed to enroll for classes. To be readmitted after academic suspension, you must submit a written petition, listing the reasons for the reinstatement. Petition forms are available at the Registration Office and the Office of the Vice President for Student Success. Completed forms should be directed to the Administrative Assistant to the Vice President for Student Success. If readmitted, you will enroll under whatever conditions the Vice President believes will help you succeed.

## Graduation & Transfer

### Applying for Graduation

To receive a degree from LCC, you must apply for graduation through the Registration Office. Pick up a graduation application in the Registration Office, 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. We recommend that you apply for graduation two quarters before you intend to graduate, so that any deficiencies may be identified and corrected. You 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. If you will be eligible to graduate at the end of summer quarter, you may—during the preceding spring quarter—apply for spring graduation and participate in Commencement, completing your requirements through the Summer Completion Option.

You may apply for graduation under the graduation requirements in effect at the time you first enrolled, provided your first enrollment year is within five years of your 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. The College subscribes to the Statewide Policy on Inter-College 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 Higher Education Coordinating Board. 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 Direct Transfer Agreement (DTA) degree or the Associate of Science – Transfer (AS-T) 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, or one or more Distribution Area requirements. Students must initiate the review process and be prepared to provide necessary documentation. For complete information, contact the Director of Enrollment Services/Registrar, (360) 442-2371.



## 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 current Associate in Arts (AA-DTA) as satisfying most or all of their general education requirements and will normally grant junior standing on transfer. Details on the AA-DTA and other transfer degree begin on page 30. Some colleges require specific course patterns or courses, in addition to the basic Associate in Arts (AA-DTA). Consult an advisor or the Advising Office in the Admissions Center for details and be sure to work closely with your program advisor. For the latest information on LCC's transfer agreements with other colleges, phone (360) 442-2356, stop by the Transfer Center in the LCC Admissions Center or go to [lowercolumbia.edu/transfercenter](http://lowercolumbia.edu/transfercenter)

## Student Records

### Official Transcripts

An official transcript is a copy of your 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 your record. You may request a transcript in-person, in writing, or online through the student information Web site, <http://lowercolumbia.edu/kiosk/>. Your transcript will only be released to you or to persons you authorize in writing. LCC charges a small processing fee for each official transcript requested.

### Records Confidentiality

To protect your privacy, only limited information about you can be released to individuals off campus without your express written permission. Federal laws concerning the privacy rights of students and college policy provide the basis for these procedures.

WITH your express written permission, information is released as follows:

1. Requests for information from employers or prospective employers.
2. Requests for student records from other colleges and schools.
3. Requests for student records, grades, and enrollment records from parents or spouses or other persons, regardless of the age of the student.
4. Directory information, which includes address, telephone number, major, degrees earned, height and weight (for athletes), and other personally identifiable information about the student.

WITHOUT your permission, information is released as follows:

1. Requests for information from College faculty and staff when the information is required to carry out their job responsibilities.

2. Requests for information from persons reviewing a student's financial aid or financial aid applications.
3. Bona fide researchers conducting special studies. Information shall be released in an unidentifiable manner, if possible.
4. In compliance with judicial orders or judicial subpoenas, information about you may be released. You must be notified by the individual responding to the subpoena.

IN AN EMERGENCY or to protect the health and safety of you or others, student information may be released. The Director of Enrollment Records/Registrar or the Vice President for Student Success determines what constitutes an emergency, in accordance with college procedures.

### Photo & Videotape Policy

Lower Columbia College takes photographs and videotapes on campus throughout the year. These images often include students, employees, and guests in classrooms, computer labs, athletic events, and other campus activities. Lower Columbia College reserves the right to use these photographs and videotapes as part of its publicity and marketing efforts. Those who attend, visit or work at Lower Columbia College do so with the understanding that these photographs and videotapes might include them and might be used in college publications, newspapers, and other media for publicity purposes.



## Administration

### President

#### Dr. James L. McLaughlin (1997)

B.A., M.S., University of Akron; Ed.D., New Mexico State University

### Vice-Presidents

#### Laura E. Brener (2007)

##### Vice President of Instruction

B.A., M.A., S.U.N.Y. Stony Brook

#### Mary L. Harding (1974)

##### Vice President for Student Success

B.A., University of Washington; M.Ed., Portland State University

#### Ellen K. Peres (2004)

##### Vice President for Administrative Services

B.S., M.B.A., University of Redlands

### Deans

#### Brendan L. Glaser (1990)

##### Dean of Workforce and Continuing Education

B.S., University of Northern Colorado; M.B.A., Pacific Lutheran University

#### Dr. Geary W. Greenleaf (2002)

##### Dean of Instructional Programs

B.A., University of Washington; M.S., Seattle Pacific University; Ed.D., Seattle University

#### Robert C. Rodger (2007)

##### Dean of Instructional Programs

B.A., M.A., J.D., University of Oregon

### Department Directors

#### Eileen Bergeson (2003)

##### Director, Title III

B.A., San Francisco State University; M.S.D., Portland State University

#### Dennis J. Farland (1974)

##### Director, Budget and Finance

A.A., Lower Columbia College; B.A., Central Washington University

#### James B. Gorman (1977)

##### Director, Financial Aid

B.A., University of Massachusetts

#### Wendy Hall (2003) Director,

##### Institutional Research, Planning and Assessment

B.A., Whitman College; M.P.A., University of Washington

#### Jason P. Hosenev (2000)

##### Director, Student Support Services

A.A., Clark College; B.S., Warner Pacific College; M.Ed., Concordia University–Portland, OR

#### Daniel E. Johnson (1999)

##### Director, Student Activities

B.A., Eastern Washington University

#### Sandy Junker (2000)

##### Director of Head Start/ECEAP

B.S., Linfield College

#### John Krause (2001)

##### Associate Vice President for Career & Student Services

B.S., University of Wisconsin–Madison; M.A. University of Wisconsin–Madison

#### Helen Kuebel (1989)

##### Director of Nursing

B.S.N., University of Michigan; M.S.N., Catholic University of America, Washington D.C.

#### Lynn Lawrence (1996)

##### Director of Enrollment Services/Registrar

A.A., Centralia College; B.A., Central Washington University

#### M. Therese Montoya (1992)

##### Director, Advising and Testing

A.A., Mt. San Antonio Junior College; B.A., California State University–Chico; M.Ed., Washington State University

#### Kirc Roland, (2001)

##### Athletics Director

B.A., San Diego State University

#### Janelle R. Runyon (1999)

##### Director, College Relations and Marketing

B.A., University of Washington

#### Chere Weiss (1990)

##### Director, LCC Woodland Center

B.A., The Evergreen State College; M.S., Portland State University

#### Nolan K. Wheeler (1994)

##### Director, Human Resource Services

A.A., Lower Columbia College; B.A., Western Washington University; M.B.A., University of Phoenix

#### Merlene York (1999)

##### Executive Director, LCC Foundation

B.S., Oregon State University



## Full Time Faculty

**Timothy Allwine (2006), Business**—B.S., Miami University; M.B.A., University of Montana

**Richard Atkins (2000), Fire Science**—A.A., Clark College; B.A., The Evergreen State College

**C. Anne Bartlett-Blair (2001), English**—B.A., Washington State University; M.A., University of New Mexico

**Clinton L. Benjamin, Ph.D. (1973), Biological Sciences**—B.S., St. Mary's College; M.S., California State University—Humboldt; Ph.D., Ohio State University

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

**Mark E. Bergeson (1980), Speech**—A.A., Diablo Valley College, B.A., M.A., San Francisco State University, M.Ed. Counseling and Guidance, Oregon State University.

**Harold A. Blair (1980), Mathematics, Metallurgy**—A.A., Lower Columbia College; B.S., University of Washington

**Patrick Boerner (1979), Student Support Services**—B.A., Western Washington University; M.S., Portland State University

**Deborah E. Brink (1999), English, Journalism**—B.A., University of Washington; M.Ed., University of Massachusetts

**Stephen A. Byman (1985), Automotive Technology, ITEC Program Coordinator**—A.A., Lower Columbia College; B.T., Oregon Institute of Technology

**Randal D. Byrum (2006), Welding**—A.T.A., Lower Columbia College

**Gary A. Carroll (1988), Mathematics**—B.A., University of Minnesota; M.A., University of California—San Diego

**Rita Catching (2003), Nursing**—B.S.N., California State College-Chico; M.N., Washington State University

**David Cordero (1994), Earth Science**—B.S., University of Oregon; M.S., Portland State University

**Donald A. Correll (1976), Drama**—B.F.A., M.A., University of Washington

**Julianna Crisman-Manzano (2006), Nursing**—A.A.S., Lower Columbia College; B.S.N., Washington State University

**Linda J. Cullom (1997), Business Technology**—B.A., University of Washington; M.A., University of Portland

**George A. Dennis (1976), Developmental Education**—B.A., Western Washington University; M.A., University of Oregon

**Donald D. Derkacht (2002), Computer Information Systems**—B.S. and M.S.E.E., Washington State University

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

**Michael J. Dugaw (1973), Speech/Forensics, History**—B.A., University of Portland; M.A. Washington State University

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

**Patrick G. Ellsberg (1983), Business**—A.A., College of Marin; B.S., California State College—Chico; M.B.A., University of California

**Allan R. Evald (1991), Welding**—A.A., Walla Walla Community College

**Greg Finkas (2007), Nursing**—A.A.S., Lower Columbia College; B.S., Western States Chiropractic College; Doctor of Chiropractic, Western States Chiropractic College; M.S.N., University of Washington

**Carol J. Flakus (1974), Mathematics**—B.S., Eastern Oregon State College; M.S., Western Washington University

**Joseph L. Green (1986), English**—B.A., California State University—Long Beach; M.A., Western Washington University

**Dale E. Groff (2007), Music**—B.S., Portland State University; M.Ed., Portland State University

**Jeanne L. Hamer (2002), Nursing**—A.A.S., Lower Columbia College; BSN, Washington State University; M.S.N., Washington State University

**George W. Henderson (1977), Counseling**—B.S., Offerbein College; M.Ed., Gonzaga University

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

**Joan L. Herman (2004), English**—B.A. and M.A., University of Oregon

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

**Karen L. Joiner (1993), Nursing**—A.A., Lower Columbia College; B.S.N., The University of the State of New York; M.S., University of Portland

**Richard M. Kelley (1971), Philosophy**—B.A., Sacred Heart Seminary; S.T.B., S.T.L., Gregorian University, Rome; Ed. Spec., Michigan State University

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

**Sharon M. Layton (1978), Nursing**—B.S.N., Washington State University; M.S., University of Portland

**Mary M. Leach (2007), Reading, Literature, Basic Skills**—B.A., Washington State University; M.A., California State University



**Colleen A. Lemhouse (2004)** Education Instructor/Early Learning Center Director—B.S., Portland State University; M.S., University of Oregon

**Jeffrey R. Lucas (2005)**, Mathematics, B.A., Northwestern University; M.S., DePaul University

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

**Kathryn A. Meier (1981)**, Nursing—B.S., M.S., University of Portland

**Gary B. Meyer (1990)**, English—B.A., University of New Mexico; M.A., Eastern Washington University

**Rhonda L. Meyers (1988)**, Biology, Medical Assisting—A.A., Lower Columbia College; B.S., Oregon State University; M.I.T., St. Martin's University; M.L.S., University of Maryland

**Tamara R. Norton (2003)**, Nursing—A.A., Lower Columbia College; B.S.N. and M.S.N., Washington State University

**Gary B. Nyberg, Ph.D. (1979)**, Music—B.A., University of Idaho; M.M., University of Wisconsin—Madison; Ph.D., Brigham Young University; Diplomate in Conducting, University of Calgary

**Michael D. O'Connor (1975)**, Electronics Technology—B.A., Western Washington University

**Yvette L. O'Neill (1992)**, Art, French—B.A., University of California—Berkeley; M.A., California State University

**Charlotte C. Persons (1992)**, Adult Basic Education, English as a Second Language—B.S., University of Missouri; M.A., University of Illinois

**Rosemary A. Powelson (1979)**, Art—B.F.A., University of Nebraska; M.F.A., Michigan State University

**Connie Ramos (2007)**, Nursing—A.A.S., Portland Community College; B.S.N., Regis University (Denver)

**Cary W. Rhode (2005)**, Mathematics—B.S., University of Illinois, M.A., SUNY Brockport

**J. Carmen Robinson (1992)**, Reference Librarian—B.A., California State College; M.L.S., University of Arizona

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

**Carl F. Roush II (1980)**, Biology—A.A., Lower Columbia College; B.S., M.S., Washington State University

**Joel W. Schaaf, Ph.D. (1974)**, Physics/Engineering—B.A., Jamestown College; M.S., Montana State University; Ph.D., Kansas State University

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

**Dennis C. Shaw, Ph.D. (1979)**, Anthropology, Sociology—A.A., St. Johns River Junior College; B.A., M.A., Florida State University; Ph.D., Washington State University

**Kelly Smith (1994)**, Physical Education, Men's Baseball Coach—B.A., Washington State University; M.A., Portland State University

**Kathy A. Stafford (2003)**, 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

**Mary E. Stone (1981)**, Counseling—B.A., M.S., University of Nebraska—Kearney

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

**Margaret A. Stuart (1999)**, Computer Information Systems—A.A., Lower Columbia College; B.S., Linfield College; M.B.A., Marylhurst University

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

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

**Lenore A. Vest (1982)**, Mathematics—B.A., M.S.T., Portland State University

**Timothy D. Veteto (2001)**, CAD/Drafting—A.A.; Oregon Institute of Technology; B.S.; Oregon Institute of Technology; M.B.A.; University of Portland

**Betty C. Vickrey (1991)**, Computer Information Systems—B.B.A., M.S., Boise State University

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

**Marguerite "Nonnie" Weaver (2001)**, Sociology—B.A. Hunter College; M.S.W. Walla Walla College

**Jerri Weyer (2007)**, Allied Health—B.S., Washington State University

**Alex L. Whitman (1994)**, English, Spanish—B.A., B.A., M.A., Central Washington University

**Ann R. Williamson (2000)**, Education, Early Childhood—B.S., Linfield College; M.Ed., City University

**Adam J. Wolfer, Ph.D. (2000)**, Chemistry—B.S., Oregon State University; M.S.; Oregon State University; M.S., Colorado State University, Ph.D., Oregon State University

**Lawrence L. Woodriff (1985)**, Auto Mechanics—A.A., B.T., Oregon Institute of Technology



**Sue Yarbrough (2007), Nursing**—B.S., Oklahoma Baptist University; M.S., University of Oklahoma; F.N.P., University of Wyoming

**Jerry M. Zimmerman, J.D. (1976), Legal Studies, Humanities**—B.A., J.D., DePaul University College of Law

## Affiliate Part-Time Faculty

**Steve Alkazin (1994), English**—B.A., University of Redlands; M.A., California State University, Fresno.

**Loren Claunch (1989), Mathematics**—A.S., Columbia Basic Junior College; B.A., Central Washington University; M.A., University of Oregon

**Allison Hutchinson (1992) Individual Development**—M.A., University of Glasgow

**Susan Jackson (1988), Adult Basic Education**—B.A., Central Washington University

**Colette Jones (1990), French**—Paris Conservatory

**Anita Martinez (1995), ABE/ESL**—B.A., California State University, San Bernardino

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

**James Woodworth (1985) Computer Information Systems, Mathematics**, B.A., Whitworth College; M.S., Portland State University

## Emeriti

*The following Lower Columbia College faculty and administrators have been honored with emeritus status by the Lower Columbia College Board of Trustees*

**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. Judith Irwin, Faculty Emeritus, 2006**

**Ms. Ann Mottet, Trustee Emeritus, 2006**



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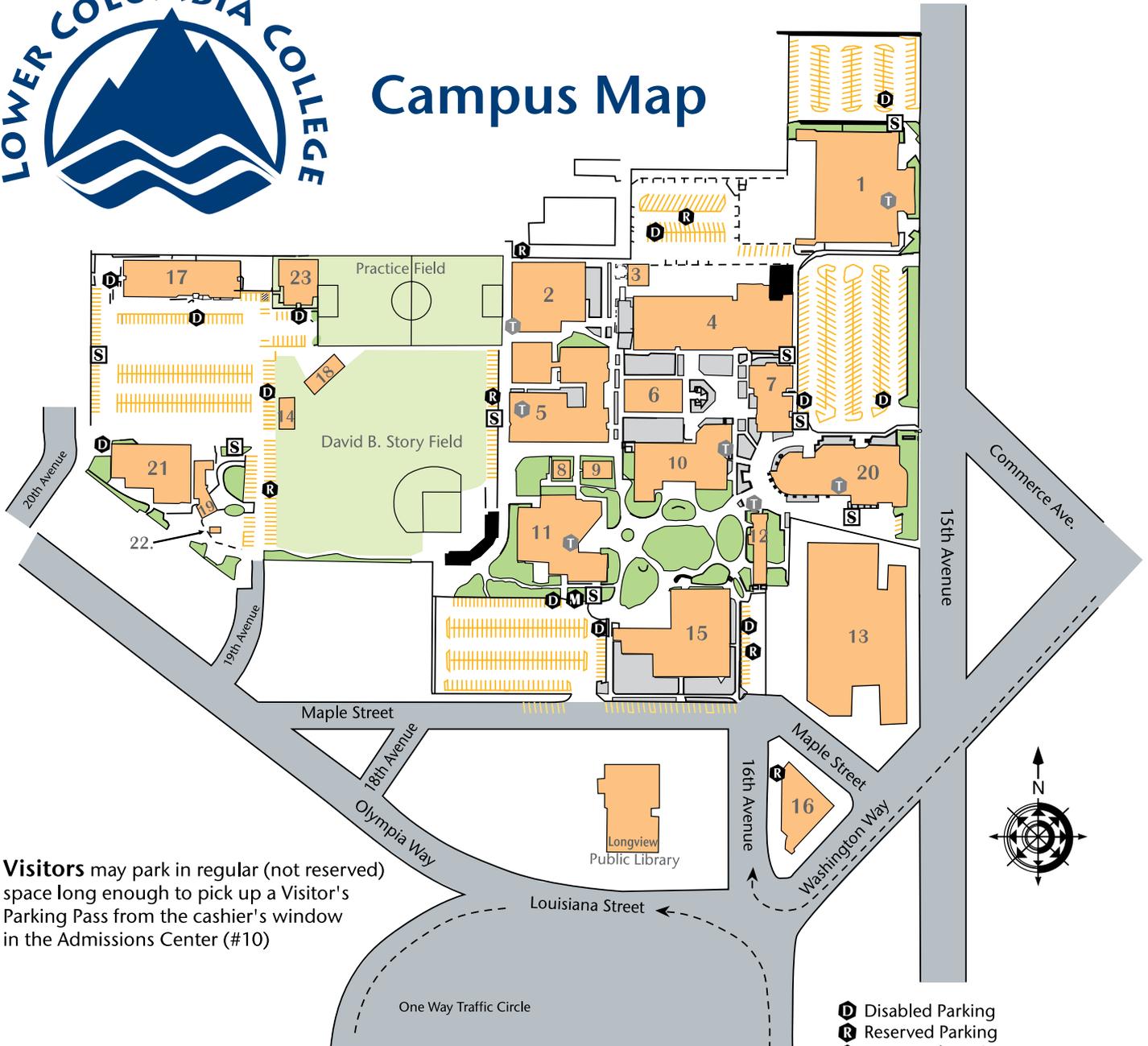
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Spanish (SPAN).....	121		
Special Services .....	5		







# Campus Map



**Visitors** may park in regular (not reserved) space long enough to pick up a Visitor's Parking Pass from the cashier's window in the Admissions Center (#10)

- D** Disabled Parking
- R** Reserved Parking
- M** Motorcycle Parking
- T** Telephones
- S** Smoking Kiosk

- 1. Don Talley Building (DTV)
- 2. Truman Myklebust Gymnasium (GYM)
- 3. Steam Plant (SPL)
- 4. Vocational Building (VOC)
- 5. Applied Arts Building (AAR)
- 6. Science Building (SCI)
- 7. Physical Science Building (PSC)
- 8. Faculty Office (FOB)
- 9. Information Technology Center (ITC)

- 10. Admissions Center (ADC)
- 11. Alan Thompson Library (LIB)
- 12. Instructional Office Building (IOB)
- 13. Rose Center for the Arts (RCA)
- 14. International Center (INC)
- 15. Main Building (MAN)
- 16. Administration Building (ADM)
- 17. Head Start/  
Home & Family Life Center (HFL)

- 18. Batting Barn
- 19. Head Start Admin.  
(former RSVP Center-RSV)
- 20. Student Center (STC)
- 21. Campus Services Building (CMS)
- 22. Greenhouse (GHS)
- 23. Head Start East Building (HSE)

**Note:** Buildings are not physically numbered. The numbers on this map are for key purposes only.



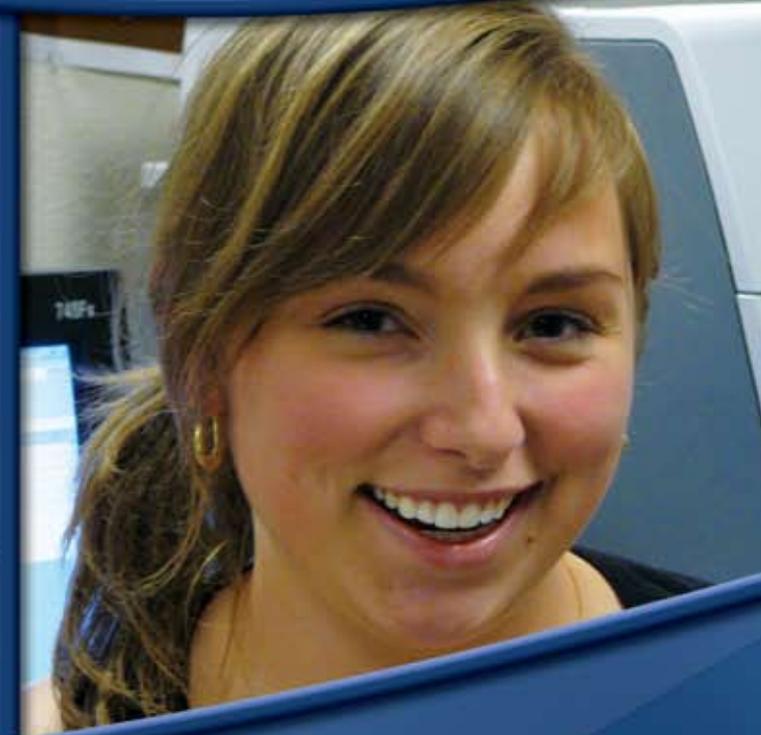
University Transfer

Worker Retraining

Professional / Technical  
Degrees & Certificates

High School Programs

Woodland Center



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