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2025-2026 CATALOG

Linn-Benton Community College cultivates an environment for success through inclusive education and community engagement.

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Albany, Oregon 97321

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GENERAL CATALOG INFORMATION

2025-2026 Academic Calendar

	Summer Term 2025	**Fall Term 2025**	**Winter Term 2026**	**Spring Term 2026**
Registration Begins	For more information, see https://www.linnbenton.edu/about/calendar/index.php#events/tag/*Calendar%20-%20Academic.			
Classes Begin	Monday, June 23	Monday, September 29	Monday, January 5	Monday, March 30
Final Exams	Last week of class	December 8-10	March 16-18	June 8-10
Commencement				June 11
Last Day of Term	Thursday, August 28	Friday, December 12	Friday, March 20	Friday, June 12

Catalog Information

The information contained in the current LBCC Catalog and quarterly Schedule of Classes reflects an accurate picture of Linn-Benton Community College at the time of publication. However, conditions can and do change. Therefore, the college reserves the right to make any necessary changes in the matters discussed herein, including procedures, policies, calendar, curriculum, course content, emphasis, and cost. Students enrolling in LBCC classes are subject to rules, limits, and conditions set forth in the current LBCC Catalog; the Schedule of Classes; the Student Rights, Responsibilities and Conduct Code; and other official publications of the college.

Complaints, concerns, or reports can be filed at https://www.linnbenton.edu/help/index.php.

Equal Opportunity/Statement of Nondiscrimination

Webpage:
https://www.linnbenton.edu/about/policies/equal-opportunity.php

LBCC Comprehensive Statement of Nondiscrimination

Linn-Benton Community College does not discriminate based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws in its programs or activities. For further information see Board Policy 1015 and Administrative Rule 1015-01. The following staff members have been designated to handle inquiries regarding the nondiscrimination policies:

For concerns or inquiries regarding disability accessibility and accommodations:

Contact: Carol Raymundo, Director, Accessibility Resources
RCH-101, Albany Campus, Albany, OR 97321
(541) 917-4789
raymundo@linnbenton.edu

For concerns or complaints about the College or an LBCC staff member:

Contact: Heather Mercer, Executive Director of Human Resource Development and Support and Title IX Coordinator
WH-200N, Albany Campus, Albany, OR 97321
(541) 917-4425
mercerh@linnbenton.edu

For concerns or complaints about a student:

Contact: Jill Childress, Manager for Student Conduct and Retention and Title IX Deputy Coordinator
WH-133, Albany Campus, Albany, OR 97321
(541) 917-4848
childrj@linnbenton.edu

Request for Special Needs or Accommodations

Direct questions about or requests for accommodations to Accessibility Resources, 541-917-4789 or accessibility@linnbenton.edu at least three business days in advance for special events and as soon as possible for classroom or other emerging requests. LBCC will make every effort to honor requests. LBCC is an equal opportunity educator and employer.

Discrimination or Harassment Complaints

If you feel you have been discriminated against in any interaction at Linn-Benton Community College, or have been harassed by another person while at LBCC, or wish to report any concern or complaint, please navigate here to make a report. This and additional information can be found here.

Summary Statement of Nondiscrimination

For accommodations requests, contact Accessibility Resources at 541-917-4789 or accessibility@linnbenton.edu at least three business days in advance. LBCC does not discriminate based on any protected status in its programs or activities. For more information, visit https://www.linnbenton.edu/about/policies/equal-opportunity.php.

Accessibility and Accommodations

Accessibility Resources provides accommodations for eligible LBCC students and event guests. The department offers support with accommodations, planning, and advocacy. Students are responsible for contacting Accessibility Resources to initiate the interactive process of determining accommodations.

Contact: Accessibility Resources at Linn-Benton Community College, RCH-105, 541-917-4789, accessibility@linnbenton.edu, or via Oregon Telecommunications Relay TTD at 1-800-735-2900 or 1-800-735-1232.

College Overview

Each year, more than 12,000 students take at least one class at Linn-Benton Community College, nearly 2,500 attending full time, making LBCC one of the largest community colleges in Oregon. About 30 percent of local high school graduates come directly to LBCC after graduation. The average age of our full-time students is 23.

Established in 1966 as a two-year public college, students attend LBCC for many reasons: to earn an associate's degree or a transfer degree to a four-year college program; to obtain employment training; to improve existing employment skills; or to enrich their lives through continuing education.

LBCC's 104-acre Albany campus is located just 10 miles east of Corvallis. Students can access academic support in the Learning Center and Library on campus. The college has a campus bookstore, a small theater, a gym, and recreation areas for student use. Dining facilities include a cafeteria operated by students of the Culinary Arts program, a cafe, and a student-run coffee house.

The Corvallis and Lebanon Campuses offer credit and non-credit classes to students. Classes in Corvallis are taught in two locations: the Benton Center and Chinook Hall. Classes in Lebanon are taught at two locations: the Advanced Technology Transportation Center and the Healthcare Occupations Center. The LBCC Horse Center houses the Equine Management program just 1.5 miles north of the Albany campus.

Parking at the college is free, with designated spaces to accommodate the needs of people with disabilities. Students are encouraged to obtain a free parking permit from Public Safety. Parking rules and regulations may be found on the LBCC Public Safety website; see Parking Regulations. Your student ID gives you access to free public transportation between LBCC and downtown Albany, Corvallis, Philomath, Lebanon, Sweet Home, and other communities in East Linn County.

Our Mission

Linn-Benton Community College cultivates an environment for success through inclusive education and community engagement.

Our Values

At Linn-Benton Community College, our values serve as the foundation that inspires our actions and unites us as a community. As responsible stewards, we are committed to:

- **Opportunity**: We support the fulfillment of potential in ourselves and each other by ensuring accessible and consistent opportunity for all.
- **Excellence**: We aspire to the highest ideals in honesty, integrity and accountability, continually striving to uphold high standards in all we do.
- **Inclusiveness**: We honor and embrace the uniqueness of every individual, fostering a sense of belonging and promoting the free and civil expression of ideas, perspectives, and cultures.
- **Learning**: We commit to the lifelong pursuit of knowledge, skills, and abilities to improve our lives and our communities, ensuring that students achieve their learning goals.
- **Engagement**: We actively connect as students, faculty, staff and community, fostering engagement practices that strengthen our collective involvement.

Core Themes

- Educational Attainment
- Cultural Richness
- Economic Vitality

Governance and Accreditation

Supported by tuition, local property taxes and state revenue, the college is directed by an elected, seven-member board of education.

Linn-Benton Community College is accredited by the Northwest Commission on Colleges and Universities. Courses are approved by the Higher Education Coordinating Commission, and lower-division courses are approved for transfer to Oregon public colleges and universities. To review LBCC's accreditation status, review the college's accreditation webpage or contact the President's Office at 541-917-4200.

Retention, Graduation Rates

In compliance with the Student Right-To-Know and Campus Security Act (Public Law 101-542), retention and graduation rates are available online at https://www.linnbenton.edu/about/policies/srtk.php.

DEGREES AND CERTIFICATES

Degree and Certificates Chart

	AS	AAS	1-YR	ST
Agriculture				
Agricultural Business Management	•			
Agricultural Sciences	•			
Animal Science	•			
Animal Technology		•		
Animal Technology: Horse Management		•		
Applied Industrial Technology & Transportation				
Apprenticeship		•	•	•
Automotive Technology		•	•	
CNC Machinist				•
Computer Aided Drafting and Design		•	•	
Construction & Forestry		•		
Electric Vehicle/Hybrid Vehicle Technician		•	•	
Industrial & Bldg Mechanic			•	
Industrial Pipe Trades		•	•	
Heavy Equipment/Diesel Technology		•		
Machine Tool Technology		•	•	
Mechatronics Industrial Automation Technology			•	•
Nondestructive Testing			•	
Welding & Fabrication Technology			•	•
Arts & Humanities				
Anthropology	•			
Art	•			
Creative Writing	•			
Digital Imaging & Prepress Tech.				•
English	•			
History	•			
Journalism and Mass Communications	•			
Liberal Studies	•			
Music	•			
Music Education	•			
Music Production and Audio Engineering	•			
Political Science	•			
Speech Communication	•			
Visual Communication			•	
Women, Gender, and Sexuality Studies	•			
World Languages	•			
Business				
Accounting Clerk				•
Accounting Technology			•	
Business Administration	•			
Economics	•			

Professional Business			•
Education & Social Services			
Early Childhood Education	•	•	•
Education	•		
Human Services	•		
Human Development & Family Science	•		
Psychology	•		
Sociology	•		
Health, Healthcare & Culinary			
Coding & Reimbursement Specialist		•	
Community Health		•	
Computed Tomography			•
Culinary Arts	•		
Dental Assistant		•	
Diagnostic Imaging	•		
Exercise & Sport Science	•		
Public Health	•		
Medical Assisting		•	
Nursing	•		
Nutrition & Food Service Systems	•		
Occupational Therapy Assistant	•		
Phlebotomy			•
Surgical Technology			•
Science, Engineering & Math			
Biological Sciences	•		
Chemistry	•		
Engineering	•		
Environmental Sciences	•		
Food and Fermentation Science	•		
General Science	•		
Geology	•		
Mathematics	•		
Physics	•		

Also Available:

Associate of Arts Oregon Transfer (AAOT)

AAOT - Elementary Education

Undecided:

Assoc. of General Studies (AGS)

Oregon Transfer Module (OTM)

Core Transfer Map (CTM)

Associate of Science (AS) • Associate of Applied Science (AAS) • 1-Year (1-YR) & Short-Term (ST) certificates

Associate of Science (AS) Degrees

The Associate of Science (AS) two-year degree is intended for students who wish to take their first two years of coursework at an Oregon community college, then

transfer to a particular four-year institution to complete a degree in the designated discipline. The Associate of Science degree has both general education and discipline specific requirements. At LBCC, the AS degree is designed to facilitate transfer to Oregon State University (OSU) and the courses listed have been agreed on by OSU as acceptable towards a four-year degree. Students who complete this degree and are accepted to OSU will be admitted as having completed all lower-division general education (Baccalaureate Core) requirements but not necessarily school, department, or major requirements with regard to courses or GPA.

Students who plan to transfer to OSU are encouraged to apply to the Degree Partnership Program (DPP) once eligible. DPP students can be dual-enrolled at LBCC and OSU while receiving financial aid from either institution based on their total credits and are considered students at both institutions, even if only attending classes at one. DPP students taking classes at LBCC have access to OSU advisors to plan their academic path.

For students who do not plan to transfer to OSU, courses taken as part of an AS degree transfer to other four-year institutions on a course-by-course basis. The assignment of LBCC credit to particular requirements of other schools is made by the institution to which the transfer is being made. Students are encouraged to consult with an advisor to ensure they fully understand degree and transfer requirements.

Associate of Science Degree Requirements

To be awarded an AS degree, students must:

- Complete a minimum of 90 credits of college-level coursework (see individual degrees for specific credit requirements). A maximum number of 24 non-traditional credits beyond any required by a given program can be used towards a degree. See the non-traditional credit section of this catalog for more information.
- Complete at least 24 credits at LBCC, 15 of which must be in the major field. Note: Credits granted for prior learning cannot be applied to this requirement.
- Have a minimum cumulative GPA of 2.25 at the time the AS degree is awarded.
- Complete WR 121Z (p. 215) with a grade of C or better.

Note: A single course cannot count towards all three of the General Education, Liberal Arts Core, and major requirements. However, a single course can count towards two of them (e.g., both General Education and major). Credits fulfilling two requirements will only be counted once.

In addition, no single course may be used by a student to satisfy more than one general education area even if a course has been approved in more than one area.

General Education Outcomes

Listed below are the general education course areas for the AS degree. Specific courses that meet these requirements are listed in this catalog and are available from program advisors. No single course may be used to satisfy more than one subject area even if a course has been approved in more than one area.

AH: Arts and Humanities: General

Upon successful completion of a Arts and Humanities: General general education (p. 10) requirement, students will be able to:

- Describe genres, forms, perspectives, events and/or ideas that have shaped and recorded the human experience.
- Analyze examples of human expression and/or human perspectives in changing cultural and/or historical contexts.
- Employ humanistic, theoretical, and/or philosophical methods to explore the human experience.

GH: Arts and Humanities: Global

Upon successful completion of a Arts and Humanities: Global general education (p. 10) requirement, students will be able to:

- Describe genres, forms, perspectives, events and/or ideas that have shaped and recorded the global human experience.
- Analyze the social and/or cultural impact of inequitable systems in relation to the global movement of people, ideas, objects, artistic forms, and/or technologies.
- Employ humanistic, theoretical, and/or philosophical methods to explore the human experience.

CM: Communication, Media, and Society

Upon successful completion of the Communication, Media, and Society general education (p. 10) requirement, students will be able to:

- Identify communication and media processes as they relate to social phenomena.
- Describe different forms of communication and media and the degree to which they meet the needs of diverse audiences and contexts.
- Apply communication theory to the development and delivery of speech communication products.

DO: Difference, Power, and Oppression: Foundations

Upon successful completion of a Difference, Power, and Oppression: Foundations general education (p. 10) requirement, students will be able to:

- Explain how ascribed differences are socially constructed, change over time, and impact our and others' lived experiences.
- Articulate- using historical and contemporary examples- how ascribed differences, combined with inequitable distribution of power across cultural, economic, social, and/or political institutions, result in racism and intersect with other forms of systemic oppression.
- Describe how assets and resilience demonstrated by members of systemically marginalized communities and cultures play a role in dismantling racism and other systems of oppression.

QA: Quantitative Literacy and Analysis

Upon successful completion of the Quantitative Literacy and Analysis general education (p. 11) requirement, students will be able to:

- Identify relevant quantitative variables and their relationship(s) in a problem.
- Solve quantitative problems using appropriate mathematical tools.
- Demonstrate reasonableness of a solution and describe limitations of method.

SA: Scientific Inquiry and Analysis

Upon successful completion of a Scientific Inquiry and Analysis general education (p. 11) requirement, students will be able to:

- Utilize scientific language, concepts, hypotheses, theories, and laws of basic natural sciences.
- Apply the cyclical process of science and think critically by constructing consistent explanations and drawing conclusions based on empirical evidence and current scientific understanding.
- Articulate the consequences and implications of science for society, daily life, and decision-making.

SO: Social Science

Upon successful completion of a Social Science general education (p. 11) requirement, students will be able to:

- Explain the informal and formal structures and processes and institutions and human behavior.
- Describe how quantitative and qualitative data are used to explain human behavior.
- Characterize your individual role in the structures, processes, or institutions of society.

WF: Writing Foundations

Upon successful completion of the Writing Foundations general education (p. 11) requirement, students will be able to:

- Write in varied styles with attention to audience, purpose, and genre, incorporating how language use relates to rhetorical situations.
- Create texts that synthesize multiple viewpoints around a central idea supported with evidence.
- Evaluate information critically using sources and foundation citation skills.

WE: Writing Elevation

Upon successful completion of a Writing Elevation general education (p. 11) requirement, students will be able to:

- Construct rhetorically-informed texts that adapt to new writing situations, audiences, and relevant knowledge domains.
- Synthesize diverse perspectives in complex conversations using critical analysis and genre-appropriate writing styles and conventions.
- Integrate critically-evaluated sources in knowledge-domain-specific documents and arguments.

Foreign Language Requirement

Students transferring to any Oregon public four-year institution must complete two terms (8 credits), or demonstrate equivalent proficiency in a world language prior to transferring. In addition, students who plan to earn a BA degree must complete a total of six terms (24 credits), or demonstrate equivalent proficiency, in a world language prior to earning their BA. Students interested in studying Spanish may complete these requirements at LBCC.

Electives

A maximum of 12 credits of Career Technical Education (CTE) coursework can be taken to fulfill elective requirements (unless otherwise specified by individual degree requirements).

CORE EDUCATION COURSES

Choose one Arts and Humanities - General, one Arts and Humanities - Global, one Communication, Media, and Society, one Difference, Power, and Oppression Foundations, one Quantitative Literacy and Analysis, two Scientific Inquiry and Analysis from different subject prefixes, one Social Science, one Writing Foundations, and one Writing Elevation.

AH: Arts and Humanities - General (3 Credits)

Select three credits from the following:

ART 102	Understanding Art	3
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ED 224	Creative Drama for Teachers	3
ENG 104Z	Introduction to Fiction	4
ENG 145	Introduction to Film Studies, 1968-1999	3
ENG 221	Children's Literature	4
ENG 261	Science Fiction	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
HUM 101	Humanities: Prehistory-Mid Ages	3
HUM 102	Humanities: Renaissance-Enlight	3
HUM 103	Hum: Romantic Era-Cont Society	3
JN 134	Intro to Photojournalism	3
JN 217	Feature Writing	3
MUS 101	Music Fundamentals	3
MUS 105	Introduction to Rock Music	3
MUS 106	History of Hip-Hop and Rap Music	3
MUS 107	History of Country Music	3
PHL 202	Elementary Ethics	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3
WR 243	Creative Writing: Script Writing Workshop	3

GH: Arts and Humanities - Global (3 Credits)

Select three credits from the following:

ANTH 110	Introduction to Cultural Anthropology	3
ART 207	Indigenous Art Of The Americas	3
ENG 102	Introduction to Global Young Adult Literature	3
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
HST 104	World History I: Ancient Civilizations	3
HST 105	World History II: Middle and Early Modern Ages	3
HST 106	World History III: The Modern and Contemporary World	3
WS 280	Global Women	3

CM: Communication, Media, and Society (3 Credits)

Select three credits from the following:

COMM 111Z	Public Speaking	4
COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4

DO: Difference, Power, and Oppression Foundations (3 Credits)

Select three credits from the following:

ANTH 283	Introduction to Medical Anthropology	3
ART 210	Women In Art	3
ART 234	Figure Drawing	4
COMM 226	Intercultural Communication	3
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
ED 216	Purpose/Structure/Function	3
ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
ENG 257	African American Literature	4
G 209	Environmental Justice	3
GEOG 100	Climate Justice	3
HDFS 201	Contemporary Families in The U.S.	3

HE 225	Social Determinants of Health	4
PE 212	Sociocultural Dimensions Of Physical Activity	3
WR 220	Stories of the U.S.-Mexico Border	4
WS 223	Intro to Women, Gender, Sexuality Studies	3
WS 225	Disney: Gender, Race, Empire	3

QA: Quantitative Literacy and Analysis (4 Credits)

Select four credits from the following:

MTH 105Z	Math in Society	4
MTH 111Z	Precalculus I: Functions	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
MTH 245	Math For Bio, Mgmt, Soc Science	4
MTH 251Z	Differential Calculus	4
STAT 243Z	Elementary Statistics I	4

SA: Scientific Inquiry and Analysis (8 Credits)

Select eight credits from two different subject prefixes from the following:

ANS 121	Animal Science	4
ANTH 240	Introduction to Biological Anthropology	4
BI 101	General Biology: Ecology and Biodiversity	4
BI 102	General Biology: Cell and Molecular Biology	4
BI 103	General Biology: Organismal Structure and Function	4
BI 221Z	Principles of Biology: Cells	5
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
BI 234	Microbiology	4
CH 121	College Chemistry I	5
CH 201	Chemistry For Engineering Majors I	5
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
CSS 205	Soils: Sustainable Ecosystems	4
G 100	Natural Disasters: Hollywood versus Reality	4
G 101	Intro to Geology: Solid Earth	4
G 201	Physical Geology I	4
G 203	Historical Geology	4
GS 105	Physical Science: Principles of Chemistry	4
GS 106	Phy Sci: Prin of Earth Science	4
GS 108	Oceanography	4
PH 104	Descriptive Astronomy	4
PH 201	General Physics	5
PH 211	General Physics With Calculus	5

SO: Social Science (3 Credits)

Select three credits from the following:

ANTH 101	Introduction to Anthropology	3
EC 115	Outline of Economics	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
EC 215	Economic Development in the U.S.	4
HDFS 200	Human Sexuality	3
HDFS 260	Emotional Well-Being: Tools for Positive Mental Health	4
HE 267	Wellness Coaching Fundamentals	3
PS 201	Intro to American Politics/Government	3
PS 211	Peace And Conflict	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
R 102	Religions of the Western World	3
R 103	Religions of Eastern World	3
SOC 204Z	Introduction To Sociology	4
SOC 222	Sociology of the Family	3
SOC 281	Introduction to Environment and Society	3

WF: Writing Foundations (4 Credits)

Select four credits from the following:

WR 121Z	Composition I	4

WE: Writing Elevation (3 Credits)

Select three credits from the following:

WR 227Z	Technical Writing	4

LIBERAL ARTS CORE REQUIREMENTS

The Liberal Arts Core requirements are a requirement of the College of Liberal Arts at Oregon State University. Transfer students in the following programs have this requirement: Anthropology, Art, Creative Writing, Economics, English, History, Journalism and Mass Communications, Liberal Studies, Music, Political Science, Psychology, Sociology, Speech Communication, and World Languages.

A single course cannot count towards all three of the General Education, Liberal Arts Core, and major requirements. However, a single course can count towards two of them (e.g., both General Education and major). Credits fulfilling two requirements will only be counted once.

I. Fine arts (3 credits)

Select one course from the following:

ART 102	Understanding Art	3
ART 115	Basic Design I: Composition	4

ART 131	Drawing I	4
ART 281	Painting	4
MUS 116	Chamber Choir	2
MUS 117	Symphony Orchestra	1
MUS 216	Chamber Choir	2
MUS 161	Music Appreciation	3
WR 240	Creative Writing: Nonfiction	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3

II. Humanities (3 credits)

Select one course from the following:

ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ENG	Any except 199	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
PHL 201	Intro To Philosophy	3
PHL 202	Elementary Ethics	3

III. Non-Western Culture (3 credits)

Select one course from the following:

ANTH 232	Peoples of the World - North America	3
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
GEOG 203	World Reg Geography: Asia	3
GEOG 204	Wrld Reg Geo: Africa/Mid East	3
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
MUS 108	Music Cultures of the World	3

IV. Social Sciences (3 credits)

Select one course from the following:

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
ANTH 240	Introduction to Biological Anthropology	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
PS 201	Intro to American Politics/Government	3
PS 204	Intro To Comparative Politics	3
PS 205	Intro International Relations	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 215	Intro Developmental Psychology	3
PSY 216	Social Psychology	3
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
SOC 206Z	Social Problems	4
WS 223	Intro to Women, Gender, Sexuality Studies	3

V. Select one additional course (3 credits) from previous categories I-IV.

No credit may be used for more than one Liberal Arts Core requirement.

Agricultural Business Management

https://www.linnbenton.edu/future-students/explore-lb/programs/agricultural-science.php

The Agricultural Business Management program is designed for students who want to complete their lower-division coursework prior to transferring to a four-year institution. It allows for completion of general education requirements, as well as preparatory coursework for continued study in agricultural business management or environmental economics and policy.

The Agricultural Business Management emphasis, Associate of Science degree is a lower-division transfer program designed to transfer to Oregon State University (OSU) or another four-year school with a program in agricultural education. Students who complete the degree requirements will be prepared to enroll in upper-division coursework. It is important to identify the program requirements at each individual institution and focus on those courses while at LBCC. Students should consult with two advisors; one at LBCC and a second at the school they intend to transfer to. This will ensure that courses being taken will satisfy the lower-division program requirements at that university.

Program Requirements

The Agricultural Business Management emphasis, Associate of Science degree program is designed to be completed in two years.

Entering students will progress at a faster rate if they have a firm background in life and physical sciences as well as mathematics. Program completion requires math, chemistry, biology and other baccalaureate core perspectives courses. *Note: College Chemistry is different than General Chemistry. Oregon State University (OSU) accepts College Chemistry, however, if transferring to a school other than OSU please consult with an advisor for appropriate chemistry requirement.*

The electives within the Associate of Science with an emphasis in Agricultural Business Management are intended to assist students in completing specific programs at Oregon State University within the College of Agriculture. Students should select electives only after consulting with an advisor. For electives, students can choose from a varied cross-section of lower-division transfer courses in the field of agriculture, providing practical instructional experiences in the areas of animal science, economics and crop production.

AGRICULTURE BUSINESS MANAGEMENT EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Agriculture Business Management emphasis, Associate of Science degree requirements will be able to:

- Apply business principles in the successful management of an agricultural enterprise.
- Interact with professionals within the industry using appropriate terminology.
- Apply appropriate computational/accounting skills and utilize technology for successful money management and other record-keeping requirements.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Agriculture Business Management emphasis, Associate of Science Program Map.*

General Education Requirements

BI 101	General Biology: Ecology and Biodiversity	4
	or	
BI 102	General Biology: Cell and Molecular Biology	4
	or	
BI 103	General Biology: Organismal Structure and Function	4
COMM 111Z	Public Speaking	4
	or	
COMM 114	Argument and Critical Discourse	3
CSS 205	Soils: Sustainable Ecosystems	4
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Subtotal: 36-37	

COMM 111Z (p. 142), EC 201Z (p. 151) and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

AG 111	Computers in Agriculture	3
AREC 211	Management in Agriculture	4
AREC 221	Marketing in Agriculture	3
BA 211Z	Principles of Financial Accounting	4
BA 213Z	Principles of Managerial Accounting	4
BA 226Z	Introduction to Business Law	4
EC 202Z	Principles of Macroeconomics	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
	Approved Electives	24
	Subtotal: 54	

Approved Electives: AG, ANS, AREC, or CSS prefix courses not listed as program requirements; or AT prefix courses not listed as program requirements (up to 10 credits); or BA prefix courses not listed as program requirements (except BA 101Z (p. 129) and BA 169Z (p. 130)); or PSY 201Z; or MTH 112Z. Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90-91

Agricultural Sciences

https://www.linnbenton.edu/future-students/explore-lb/programs/agricultural-science.php

The Agricultural Sciences program is designed for students who want to complete their lower-division coursework prior to transferring to a four-year institution. It allows for completion of general education requirements, as well as preparatory coursework for continued study in agricultural sciences, crop science, and rangeland resources.

The Agricultural Sciences emphasis, Associate of Science degree is a lower-division transfer program designed to transfer to Oregon State University (OSU) or another four-year school with a program in agricultural education. Students who complete the degree requirements will be

prepared to enroll in upper-division coursework. It is important to identify the program requirements at each individual institution and focus on those courses while at LBCC. Students should consult with two advisors; one at LBCC and a second at the school they intend to transfer to. This will ensure that courses being taken will satisfy the lower-division program requirements at that university.

Program Requirements

The Agricultural Sciences emphasis, Associate of Science degree program is designed to be completed in two years.

Entering students will progress at a faster rate if they have a firm background in life and physical sciences as well as mathematics. Program completion requires math, chemistry, biology and other baccalaureate core perspectives courses. *Note: College Chemistry is different than General Chemistry. Oregon State University (OSU) accepts College Chemistry, however, if transferring to a school other than OSU please consult with an advisor for appropriate chemistry requirement.*

The electives within the Associate of Science with an emphasis in Agricultural Sciences are intended to assist students in completing specific programs at Oregon State University within the College of Agriculture. Students should select electives only after consulting with an advisor.

AGRICULTURAL SCIENCES EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Agricultural Sciences emphasis, Associate of Science degree requirements will be able to:

- Apply general agricultural skills and concepts within the agricultural industry.
- Interact with industry professionals using appropriate terminology.
- Apply business principles and accounting skills for successful money management and record keeping.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) degree. For information on the advised sequence of program courses, see the Agricultural Sciences emphasis, Associate of Science Program Map.

General Education Courses

BI 101	General Biology: Ecology and Biodiversity	4
	or	
BI 221Z	Principles of Biology: Cells	5
CH 121	College Chemistry I	5
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Subtotal: 37-38	

BI 221Z (p. 133) and CH 121: Four credits apply toward general education requirements; one credit applies toward program.

EC 201Z (p. 151) & WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

AG 111	Computers in Agriculture	3
AREC 211	Management in Agriculture	4
AREC 221	Marketing in Agriculture	3
BA 215	Survey of Accounting	4
BA 226Z	Introduction to Business Law	4
BI 102	General Biology: Cell and Molecular Biology	4
	or	
BI 222Z	Principles of Biology: Organisms	5
BI 103	General Biology: Organismal Structure and Function	4
	or	
BI 223Z	Principles of Biology: Ecology and Evolution	5
CH 122	College Chemistry II	5
CSS 205	Soils: Sustainable Ecosystems	4
	Approved Electives	18
	Subtotal: 53-55	

OSU prefers students to take BI 221Z (p. 133), BI 222Z (p. 133), and BI 223Z (p. 133), but accepts BI 101, BI 102, and BI 103.

Approved Electives: AG, ANS, AREC, or CSS prefix courses not listed as program requirements; or AT prefix courses not listed as program requirements (up to 10 credits); or PSY 201Z; or MTH 112Z. Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90-93

Animal Science

https://www.linnbenton.edu/future-students/explore-lb/programs/animal-science.php

The Agricultural Sciences Department offers lower-division transfer courses that students in Animal Science would require. The courses provide the proper background for those who wish to pursue a degree at a four-year institution. Valuable practical instruction assists students in meeting their objectives.

The department also offers two Associate of Science degrees designed to assist students planning to transfer to Oregon State University (OSU) or another four-year school with an animal science or equine science program; an Animal Science emphasis, Associate of Science degree and an Equine Science emphasis, Associate of Science degree. Students completing the degree requirements will be prepared to enroll in upper-division coursework. It is important that you identify the program requirements of the institution that you plan on transferring to and focus on those classes at LBCC. You may want to consult with two advisors; one at LBCC and a second at the school you intend to transfer to. This will ensure you will be taking the courses that will satisfy the lower-division program requirements at that university.

Program Requirements

The Animal Science emphasis, Associate of Science degree and Equine Science emphasis, Associate of Science degree are designed to be completed in two years.

Entering students will progress at a faster rate if they have a firm background in life and physical sciences as well as mathematics. Program completion requires math, chemistry, biology and other baccalaureate core perspectives courses. *Note: College Chemistry is different than General Chemistry. Oregon State University (OSU) accepts College Chemistry, however, if transferring to a school other than OSU please consult with an advisor for appropriate chemistry requirement.*

A cross-section of lower-division agriculture electives are available, providing practical instructional experiences in animal science, economics, and crop production. The electives within the Animal Science program are intended to assist students in completing specific programs at Oregon State University within Animal Science Option areas. Students should select electives only after consulting with an advisor.

Facilities

Classes are conducted in modern classrooms and laboratories that have microcomputers, microscopes, and other lab equipment for student use. Emphasis is placed on hands-on experience, and many classes utilize local livestock producers for in-the-field laboratory exercises.

ANIMAL SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Animal Science emphasis, Associate of Science degree requirements will be able to:

- Effectively apply multiple species animal husbandry skills and concepts within the livestock industry.
- Research issues related to nutrition, management, marketing, health and reproduction.
- Interact with professionals within the industry using appropriate terminology.
- Apply business principles and accounting skills for successful money management and record-keeping.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Animal Science emphasis, Associate of Science Program Map.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 121	College Chemistry I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3

Subtotal: 38

BI 221Z (p. 133), CH 121 or CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

EC 201Z (p. 151) and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

ANS 121	Animal Science	4
ANS 207	Careers in Animal Agriculture	1
ANS 210	Feeds and Feed Processing	4
ANS 211	Applied Animal Nutrition	3
ANS 231	Livestock Evaluation	3

ANS 278	Genetic Improvement: Livestock	3
AREC 211	Management in Agriculture	4
AREC 221	Marketing in Agriculture	3
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
CH 122	College Chemistry II	5
	or	
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 123	College Chemistry III	5
	or	
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
	Approved Electives	7

Subtotal: 52

Approved Electives: ANS, AREC, or CSS prefix courses not listed as program requirements; or AT 163, AT 164, AT 227A (p. 127), AT 227B (p. 127), or MTH 112Z (p. 181). Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90

EQUINE SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Equine Science emphasis, Associate of Science degree requirements will be able to:

- Apply equine husbandry skills and concepts successfully within the field.
- Research nutritional, basic management, marketing, health, reproduction, and training issues in horses.
- Interact with professionals unique to the equine industry using appropriate terminology.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Equine Science emphasis, Associate of Science Program Map.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 121	College Chemistry I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
COMM 218Z	Interpersonal Communication	4
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3

Subtotal: 39

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

COMM 218Z (p. 143), EC 201Z (p. 151), and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Students should consult with an advisor for appropriate chemistry requirement.

Program Courses

ANS 121	Animal Science	4
ANS 210	Feeds and Feed Processing	4
ANS 211	Applied Animal Nutrition	3
ANS 220	Introductory Horse Science	4
ANS 221	Equine Conformation and Performance	2
ANS 222	Young Horse Training	2
ANS 223	Equine Marketing	2
ANS 278	Genetic Improvement: Livestock	3
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
CH 122	College Chemistry II	5
	or	
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 123	College Chemistry III	5
	or	
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
	Approved Electives	7

Subtotal: 51

Approved Electives: ANS or CSS prefix courses not listed as program requirements; or AT 163, AT 164, AT 227A, AT 227B (p. 127), BA 260, or PSY 201Z (p. 205). Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90

Anthropology

https://www.linnbenton.edu/future-students/explore-lb/programs/anthropology.php

The Anthropology emphasis, Associate of Science degree program is designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in Anthropology. Students interested in this option are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

An OSU Bachelor of Arts degree requires that students take two years of a college-level second language. While this is not a requirement of this Associate of Science degree, it is highly recommended that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program. Students also have the choice in Anthropology to pursue a Bachelor of Science degree.

Students interested in completing a bachelor's degree in Anthropology at OSU will choose from one of four sub-disciplines as they move on to OSU: Biological Anthropology, Archaeology, Linguistics, or Cultural Anthropology. Anthropologists are employed in a wide variety of professions and can be found in corporations, all levels of government and the military, museums and other educational institutions, and non-profit organizations.

ANTHROPOLOGY EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Anthropology emphasis, Associate of Science degree requirements will be able to:

- Articulate the interplay between social or natural forces and individuals.
- Apply analytical skills to social or natural phenomena to explain, evaluate, or predict human behavior.
- Understand and respect cultural differences by: articulating an understanding of the historical basis of cultural ideas, behavior, or issues of inequality, or by articulating how their cultural background influences their reactions to or interactions with others.
- Articulate an awareness of issues related to historical or contemporary inequities in U.S. society and propose methods that would facilitate a more equitable society.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science degree. For information on the advised sequence of program courses, see the Anthropology emphasis, Associate of Science Program Map.

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
		Subtotal: 35

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward the program.

MTH 105Z (p. 181) or higher will meet the math general education requirement. Exception: Some archaeology students might need MTH 111Z (p. 181) if they plan to work with GIS. Please see your advisor.

Liberal Arts Core Courses

See the degree requirements section for a list of Liberal Art Core (p. 11) courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
		Subtotal: 15

Program Courses

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
	or	
ANTH 240	Introduction to Biological Anthropology	4
ANTH 270	Indigenous Anthropology	3
	Electives	28

Subtotal: 40

ANTH 232 and ANTH 283 are recommended electives.

Total Credit Hours: 90-91

Art

https://www.linnbenton.edu/future-students/explore-lb/programs/visual-arts.php

The Art curriculum is designed to enrich student learning in visual art and develop skills for expressing ideas through art. Historical and cultural perspectives regarding visual expression are explored in all art courses. Lecture courses in Art History and Understanding Art embrace the realm of human experience presented through art. The Art department provides the opportunity for students to develop and refine their skills by offering studio classes in drawing, painting, ceramics, digital photography, compositional design, and three-dimensional design. Classes are open to all students. Some second-year classes have prerequisites. Studio classes may be repeated for credit if more experience is desired.

The department offers an Art emphasis, Associate of Science degree designed for students transferring to Oregon State University (OSU). Students transferring to the College of Liberal Arts at OSU can earn degrees in Art History, Studio Art, Photography, Graphic Design, and New Media Communication. Students transferring to OSU can also earn a degree in Interior Design, which is part of the College of Business at OSU and thus subject to different requirements – please see an advisor for guidance on preparing for these degrees. Students who wish to transfer seamlessly into any Art major at OSU should talk to their advisor as soon as possible about taking classes at both LBCC and OSU through the Degree Partnership Program (DPP).

Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

Ceramics courses are offered at the Benton Center where students may take two terms of ceramic studio courses - ART 154 and ART 254. For students interested in further study of ceramics, CWE and Special Projects courses are recommended. There are galleries for the exhibit of both student and professional artwork.

Program Requirements

The program is designed to be completed in two years. This assumes that entering students have tested at or above the following levels on the Computerized Placement Test: WR 121Z Composition I and MTH 105Z Introduction to Contemporary Mathematics or MTH 111Z Precalculus I: Functions.

ART EMPHASIS, ASSOCIATE OF SCIENCE DEGREE

Students who successfully complete all Art emphasis, Associate of Science degree requirements with be able to:

- Analyze the form and content of works of art across different times and cultures.
- Demonstrate visual literacy through the use of the elements of art and principles of design.
- Solve visual problems.
- Develop skills to effectively critique visual media.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Art emphasis, Associate of Science Program Maps.*

General Education Requirements

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3

Subtotal: 35

WR 227Z (p. 216): 3 credits apply toward general education requirements; one credit applies toward program.

Program Courses

Liberal Arts Core courses are required for degrees in the College of Liberal Arts at Oregon State University (OSU). Although 15 credits are required before graduating from OSU, students in the Fine Art track will take only six prior to transfer to OSU, which will allow students to complete the Pre-Portfolio Core in Art. Students in the Photography track will take only nine Liberal Arts Core credits prior to transfer. See the degree requirements section for a list of Liberal Arts Core courses. (p. 11)

ART 102	Understanding Art	3

ART 120	Foundations in Digital Imaging Processes	4
	or	
	Liberal Arts Core	
ART 115	Basic Design I: Composition	4
ART 121	Computers in Visual Arts	4
	or	
	Electives	3
ART 131	Drawing I	4
	or	
	Liberal Arts Core	
ART 117	Basic Design: 3-Dimensional	4
	or	
	Liberal Arts Core	
ART 122	Foundations in Motion 4-D	4
	or	
	Electives	3
ART 263	Digital Photography	4
	or	
	Studio Elective	4
ART 281	Painting	4
	or	
	Liberal Arts Core	
ART 234	Figure Drawing	4
	or	
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
	Electives	10-13
	Liberal Arts Core	

Subtotal: 55

Studio Art and Photography paths should consider taking ART 120 only if remedial computer skills are needed. Students should talk with their advisors about this series to determine if they should start at ART 120 or ART 121. Art History path should take Liberal Arts Core.

Studio Art and Photography paths should take ART 121 and ART 131. Art History path should take one Liberal Arts Core class and one Elective.

Studio Art and Photography paths should take ART 117. Art History path should take Liberal Arts Core.

Studio Art and Photography paths should take ART 122. Art History path should take an elective course.

Studio Art and Photography paths should take ART 263. Art History path should take an elective course.

Fine Arts path should take ART 281. Photography and Art History paths should take an elective course or a Liberal Arts Core course.

Studio Art path should take ART 234. Photography and Art History paths should take an elective course.

Total Credit Hours: 90

Biological Sciences

https://www.linnbenton.edu/future-students/explore-lb/programs/biology.php

The Biology Department provides a variety of courses to meet the needs and interests of at least four groups of students:

- Transfer students in majors other than science who take general biology courses to meet their perspectives or the science requirement for an Associate of Arts Oregon Transfer, Associate of Science or Bachelor's degree.
- Students who require specific biology courses in order to earn a degree or certificate. For example, students in the Nursing, Dental Assisting and Animal Technology programs are required to take courses such as Human Anatomy and Physiology, Nutrition or Microbiology.
- Science majors in fields such as biology, forestry, fisheries and wildlife, agriculture, or pre-medicine who complete their first two years at LBCC, then transfer to a four-year institution. These students enroll in required courses such as Biology or Wildlife Conservation.
- Students who have a general interest in biology, natural history, or the environment.

In biology courses, students learn to understand life processes, the diversity of life and the role and responsibility of humans in the natural environment. Most courses are laboratory or field oriented.

The department offers one Associate of Science degree. The Associate of Science degree with an emphasis in Biological Sciences is a lower-division transfer program designed to assist students planning to complete their baccalaureate studies in a biological science at Oregon State University, where baccalaureate degrees may be earned in biology, microbiology, botany, entomology, general science or integrative biology.

Students seeking to transfer to an institution other than OSU may be best served by pursuing an AA(OT) while taking specific biology, physical science and mathematics courses that will transfer to the student's selected college or university. The AA(OT) is a general transfer degree and does not include program requirements. It is important that you identify the four-year school you plan to attend. You should review the requirements of the program you plan to study at that institution and take those classes at LBCC. You may want to work with two advisors; one at LBCC and a second at the institution you hope to attend to make sure you are taking the courses that will meet program requirements.

Program Requirements

The Associate of Science degree is designed to be completed in two years. This assumes that entering students are prepared to take MTH 111Z (p. 181) Precalculus I: Functions, WR 121Z (p. 215) Composition I, and CH 221Z (p. 140). If this is not the case, students need to allow extra time to complete this degree.

CH 221Z (p. 140) General Chemistry I and CH 227Z (p. 140) General Chemistry I Laboratory, which are usually taken in the first term of the Biological Sciences degree program, requires that the student possess a basic knowledge of chemistry prior to enrolling in the course. In order to fulfill this requirement a student must either:

- Pass the Chemistry placement test, or
- Take a college-level chemistry course (CH 112, CH 121, or CH 150).

Students can test out of CH 150 by taking the chemistry placement test. See the Testing Services webpage for more information.

BIOLOGICAL SCIENCES EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Biological Sciences emphasis, Associate of Science degree requirements will be able to:

- Interpret and explain biological phenomena by using concepts, terminology, methods, and equipment of biology, mathematics, chemistry, and physics.
- Further develop and apply knowledge in new situations as it relates to biology and life systems.
- Appraise and evaluate the richness, diversity, and complexity of life, and methods of science used to investigate it.
- Establish and propose scientific questions, and use methods of scientific inquiry to formulate and test hypotheses and devise explanations.
- Investigate and evaluate the human and environmental implications and impacts of biological phenomena.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Biological Sciences emphasis, Associate of Science Program Map.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
COMM 111Z	Public Speaking	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
HE 225	Social Determinants of Health	4
	or	
	Difference, Power, and Oppression Foundations	3
PSY 201Z	Introduction to Psychology I	4
	or	
	Social Science	3
	Arts and Humanities - General	3
	Arts and Humanities - Global	3

Subtotal: 38-40

HE 225 and PSY 201Z (p. 205) are for the Biohealth and Pre-Professional Healthcare Track.

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

COMM 111Z (p. 142), HE 225, PSY 201Z (p. 205), and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5

CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
	Electives	6-8
	Subtotal: 50-52	

Note: If students enter the program at a math level higher than MTH 111Z (p. 181) and MTH 112Z (p. 181), those courses should not be taken and instead, the credits should be replaced by additional approved electives courses. Students should work with an advisor to choose courses that best match their goals.

Approved Electives

These courses may be taken to meet specific program requirements at OSU. Students should work with an advisor as soon as possible to select courses that fit their goals.

Biohealth and Pre-Professional Healthcare Track

ANTH 240	Introduction to Biological Anthropology	4
EC 201Z	Principles of Microeconomics	4
HDFS 201	Contemporary Families in The U.S.	3
PH 201	General Physics	5
PH 202	General Physics	5
PH 203	General Physics	5
PSY 202Z	Introduction to Psychology II	4
SOC 204Z	Introduction To Sociology	4
SOC 206Z	Social Problems	4
STAT 243Z	Elementary Statistics I	4

General Biology Track

GS 108	Oceanography	4
PH 201	General Physics	5
PH 202	General Physics	5
PH 203	General Physics	5

Total Credit Hours: 90

Business Administration

https://www.linnbenton.edu/future-students/explore-lb/programs/business-administration.php

The Business Administration emphasis, Associate of Science degree program is designed for students planning to transfer to Oregon State University (OSU) to complete a baccalaureate degree in the College of Business. It is important that students check with a business transfer curriculum advisor before enrolling in the Business Administration program courses. Interested students are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. College of Business advisors from OSU are available to answer questions at the OSU Partnership Office in McKenzie Hall.
Visit https://www.linnbenton.edu/future-students/explore-lb/university-partnerships/index.php for a schedule.

Program Requirements

Students expecting to graduate in two years should have a strong interest in the world of business; they should have sufficient skills in mathematics and writing to enroll in MTH 111Z Precalculus I: Functions and WR 121Z Composition I.

BUSINESS ADMINISTRATION EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Business Administration, Associate of Science degree requirements will be able to:

- Demonstrate an ability to utilize business computer applications and specifically, spreadsheet software for quantitative business analysis.
- Demonstrate math skills at the college level.
- Demonstrate effective oral and written communication skills and the ability to effectively work in teams.
- Understand the roles of marketing, management, finance, accounting, information technology, economics, law, and ethics in the business environment.
- Be familiar with the multicultural and global environment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Business Administration emphasis, Associate of Science Program Map.*

General Education Courses

COMM 111Z	Public Speaking	4
	or	

COMM 114	Argument and Critical Discourse	3
	or	
COMM 218Z	Interpersonal Communication	4
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Subtotal: 36-37	

COMM 111Z (p. 142) or COMM 218Z (p. 143), (p. 216)EC 201Z (p. 151), and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

BA 101Z	Introduction to Business	4
BA 169Z	Data Analysis Using Microsoft Excel	4
BA 211Z	Principles of Financial Accounting	4
BA 213Z	Principles of Managerial Accounting	4
BA 223	Principles of Marketing	4
BA 226Z	Introduction to Business Law	4
BA 240	Finance	4
BA 260	Entrepreneurship & Sm Business	4
BA 275	Business Quantitative Methods	4
BA 291	Business Process Management	4
EC 202Z	Principles of Macroeconomics	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
	Electives	6
	Subtotal: 54	

Total Credit Hours: 90-91

Economics

https://www.linnbenton.edu/future-students/explore-lb/programs/economics.php

The Economics emphasis, Associate of Science degree is designed for students planning to transfer to Oregon State University's (OSU) College of Liberal Arts to complete a baccalaureate degree in Economics. It is important that students check with the Economics transfer curriculum advisor before enrolling in these classes.

OSU offers both Bachelor of Arts (BA) and Bachelor of Science (BS) degrees in Economics. The BA requires that students take two years of a college-level foreign language. While this is not a requirement of this Associate of Science degree, it is highly recommended that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program. The BS degree requires 15 additional credits in math, science, and computer science -- work with an advisor and talk about ways to meet these requirements at LBCC.

Program Requirements

Students expecting to graduate in two years should have a strong interest in the economy. They should have sufficient skills in mathematics and writing to enroll in MTH 111Z Precalculus I: Functions and WR 121Z Composition I.

ECONOMICS EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Economics emphasis, Associate of Science degree requirements will be able to:

- Present economic theory and applications in written and oral form.
- Demonstrate an understanding of microeconomic and macroeconomic theory.
- Apply economic theory to issues in fields of economics.
- Enter a four-year economics program with the proper analytical tools.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Economics emphasis, Associate of Science Program Map.*

General Education Courses

MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3

Subtotal: 35

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) *courses.*

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
	or	
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
	Electives	24
	Subtotal: 40	

See list of recommended electives below.

Recommended Electives

BA 201	Applied Business Analytics	4
BA 211Z	Principles of Financial Accounting	4
BA 275	Business Quantitative Methods	4
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
MTH 252Z	Integral Calculus	4
MTH 254	Multivariable Calculus	4

Higher level mathematics is recommended, particularly for students interested in graduate level economics or the Mathematical Economics degree at OSU.

BA 211Z is recommended for students interested in Managerial Economics at OSU.

Total Credit Hours: 90

Education

https://www.linnbenton.edu/future-students/explore-lb/programs/education.php

The Education/Human Development and Family Studies department offers programs for students who want to become preschool, elementary, middle, and secondary school teachers. Students interested in becoming a preschool teacher, see the Early Childhood Education (p. 79) section.

The first step for students who wish to become K–12 teachers is to see an Education advisor. Students who want to become K–12 teachers can take their first 90 credits of coursework at LBCC, then transfer to a four-year university and work toward their teaching credential. The College of Education at each university determines the unique path it requires for its teaching candidates. The Education advisors at LBCC have the most current program information from local universities.

Students should determine their preferred grade level and/or subject area of teaching and the university they would like to attend following LBCC. These decisions help ensure students take the most beneficial courses while at LBCC.

Programs that lead to teacher certification are available at many public and private higher education institutions in Oregon.

Program Requirements

The program is designed to be completed in two years by students attending full time. This assumes that entering students have prerequisite basic skills. The course requirements listed below do not include pre-college courses. Most teacher preparation programs expect students to have worked in public schools in order to be admitted. ED 101A Introduction to Education: Practicum and Seminar meets this requirement. This course gives students the opportunity to experience a K-12 classroom, be prepared to apply to a college of education, and to make final decisions about a teaching career. Public school placements must be arranged one term in advance. Work with an advisor to be ready to enroll in these classes.

OSU BS: Elementary Education

OSU offers one elementary education degree. Students interested in transferring to this program should complete the AAOT: Elementary Education emphasis (p. 106) degree from LBCC.

Students can take the first 90 credits (of the required 180 credits) at LBCC and earn an AAOT: Elementary Education emphasis degree that follows the Oregon Major Transfer Map.

WOU BS: Elementary Education

WOU is committed to facilitating the learning and development of college students who in turn successfully affect the learning and development of others. Students

interested in transferring to this program should complete the AAOT: Elementary Education emphasis (p. 106) degree from LBCC.

Students can take the first 90 credits (of the required 180 credits) at LBCC and earn an AAOT: Elementary Education emphasis degree that follows the Oregon Major Transfer Map.

Engineering

https://www.linnbenton.edu/future-students/explore-lb/programs/engineering.php

The LBCC Engineering program provides an Associate of Science degree with an emphasis in engineering. The program provides a balanced pre-engineering curriculum to prepare students for transfer to a bachelor's degree program. The curriculum for this degree features a broad base of pre-engineering courses, a solid foundation in mathematics and the physical sciences, and core requirements in general education.

The LBCC Engineering degree is a generic degree that fits many different engineering majors. Engineering students should take the basic courses listed below, and then choose the specific courses from the list of electives that are required by their engineering major. Students should refer to the engineering advising guides for the specific course requirements of each engineering major.

The Associate of Science degree with an emphasis in Engineering is a lower-division program that transfers directly to Oregon State University. Students completing the degree requirements will be prepared to enroll in upper-division coursework.

Students seeking to transfer to an institution other than OSU may be best served by pursuing an AA(OT) while taking specific engineering, physical science, mathematics, and biology courses that will transfer to the student's selected college or university. The AA(OT) is a general transfer degree and does not include program requirements. It is important that you identify the four-year school you plan to attend. You should review the requirements of the program you plan to study at that institution and take those classes at LBCC. You may want to work with two advisors; one at LBCC and a second at the institution you hope to attend to make sure you are taking the courses that will meet program requirements.

Many students start at terms other than fall term and take night classes as well as day classes. Some students attend part-time.

Program Requirements

Students entering the program with solid high school backgrounds in physics, chemistry, and pre-calculus can expect to complete the program in two years. Students who need to complete any pre-calculus classes after their arrival on campus should expect to spend more than two years in the program. Many of the courses listed as fall term freshman courses have prerequisites. Entering students who are deficient in mathematics, chemistry, writing, or reading commonly spend three years at LBCC before transferring to a four-year institution.

Students should be prepared to purchase a scientific-type electronic calculator.

ENGINEERING EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Engineering emphasis, Associate of Science degree requirements will be able to:

- Apply knowledge of mathematics to formulate and solve engineering problems.
- Use computers to solve engineering problems.
- Properly set up and follow an engineering process to solve engineering problems.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Engineering emphasis, Associate of Science Program Maps.*

General Education Courses

OSU does not allow students to take courses in their chosen discipline to meet this requirement.

CH 201	Chemistry For Engineering Majors I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
COMM 111Z	Public Speaking	4
	or	
COMM 114	Argument and Critical Discourse	3
MTH 251Z	Differential Calculus	4
PH 211	General Physics With Calculus	5
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression	3

	Foundations	
	Social Science	3
		Subtotal: 37-38

COMM 111Z (p. 142) and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

CH 201, CH 221Z (p. 140) and CH 227Z (p. 140) and PH 211: Four credits apply toward general education requirements; one credit applies toward program.

Program Courses

CH 202	Chemistry For Engineering Majors II	5
	or	
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
ENGR 100	Orientation to Engineering	3
ENGR 102	Design Thinking and Problem Solving	4
ENGR 103	Engineering Computation and Algorithmic Thinking	4
MTH 252Z	Integral Calculus	4
MTH 254	Multivariable Calculus	4
MTH 256	Applied Differential Equations	4
MTH 264	Introduction to Matrix Algebra	2
MTH 265	Introduction to Series	2
PH 212	General Physics With Calculus	5
PH 213	General Physics With Calculus	5
	Electives	20
		Subtotal: 62

Students should choose from the list of approved electives below.

Approved Electives

Students should choose courses that are required for their major at the 4-year institution they plan to attend. Electives must include a minimum of four 200-level ENGR courses OR match the requirements for an engineering major at OSU or another accredited university and include a minimum of two 200-level ENGR courses.

BA 215	Survey of Accounting	4
BA 226Z	Introduction to Business Law	4
BI 221Z	Principles of Biology: Cells	5
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
CEM 263	Surveying	3
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
CSS 205	Soils: Sustainable Ecosystems	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
ENGR 201	Electrical Fundamentals: DC Circuits	4
ENGR 202	Electrical Fund: AC Circuits	4
ENGR 203	Electric Fund: Signals/Controls	4
ENGR 211	Statics	4
ENGR 212	Dynamics	4
ENGR 213	Strength Of Material	4
ENGR 217	Dynamics for Mechanical Engineering	4
ENGR 230	Computational Methods for Engineering	4
ENGR 242	Introduction To GIS	3
ENGR 245	Engineering Graphics: Civil	3
ENGR 248	Engineer Graphics: Mechanical	3
ENGR 271	Digital Logic Design	3
ENGR 272	Digital Logic Design Lab	1
MTH 231	Elements Of Discrete Math	4
MTH 255	Vector Calculus	4
MTH 264B	Introduction to Matrix Computations	1
STAT 265	Introduction to Statistics for Engineers	4

Total Credit Hours: 99-100

Students planning to major in Mechanical, Industrial, Manufacturing, or Energy Systems Engineering at Oregon State University are not required to take MTH 265 but should take MTH 264B (p. 183) instead.

Students planning to major in Mechanical Engineering at OSU should take ENGR 217 and not take ENGR 212. They should also take ENGR 230 and also EC 201Z (p. 151) or EC 202Z (p. 151) for their Social Science Requirement.

Students planning to major in Chemical Engineering, Environmental Engineering, Bioengineering, or Ecological Engineering at OSU should take CH 221Z (p. 140), CH 222Z (p. 140) and CH 223Z (p. 140) and not take CH 201 and CH 202.

Students planning to major in Construction Engineering Management at OSU should take BA 215, BA 226Z (p. 131), and EC 202Z (p. 151) and not take CH 202, MTH 254, MTH 256, MTH 264, MTH 265 and PH 213.

Students planning to major in Forest Engineering Management at OSU should take CSS 205 and not take CH 202, MTH 264, MTH 265 and PH 213.

English

https://www.linnbenton.edu/future-students/explore-lb/programs/english.php

Whether you plan to enter the sciences, a business or technical field, or the liberal arts, your career success will be enhanced by the strong writing and thinking skills that are at the heart of LBCC's English emphasis.

English majors planning to transfer to Oregon State University (OSU) are advised to complete an Associate of Science degree. OSU offers courses for those interested in the English major (as well as minors in English, Writing, Applied Journalism, and Film) and for those interested in teaching English in elementary or secondary schools.

An OSU Bachelor of Arts degree requires that students take two years of a college-level second language. While this is not a requirement of this Associate of Science degree, it is highly recommended that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program.

Students planning to transfer to the University of Oregon (UO) or any other state university should consider completing an AAOT (p. 102) degree. The AAOT is a general degree that needs to be tailored to each four-year institution. Work with an English advisor to review program requirements for the four-year institution and enroll in required courses while at LBCC to ensure that a Bachelor's degree can be completed in a timely manner.

Program Requirements

The English program welcomes students at all skill levels, from beginner to advanced. However, to complete the English emphasis, Associate of Science degree within a two-year period, students will need to complete at least 15 credits per quarter and test into WR 121Z (p. 215) Composition I and MTH 105Z (p. 181) Math in Society on LBCC's Computerized Placement Test (CPT). Students who do not place into WR 121Z (p. 215) or MTH 105Z (p. 181) can take them with the addition of a 1 credit WR or MTH corequisite support course.

CREATIVE WRITING EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Creative Writing emphasis, Associate of Science degree requirements will be able to:

- Identify, evaluate, and employ appropriate creative writing concepts in multiple genres.
- Engage in the creative process through problem-solving, experimentation, and inspiration to produce original works across multiple genres.
- Select and use revision practices to enhance the content and structure of written work and create a portfolio of publication-ready work.
- Demonstrate critical thinking, problem solving, and interpersonal skills within written and oral communication.
- Analyze and discuss the literature of diverse eras, regions, and cultures.
- Evaluate the technical elements and theories of literature across multiple genres.
- Develop one-on-one relationships with creative writing faculty authors and mentors.
- Demonstrate an understanding of human behavior, institutions, and societies in creative writing and literature contexts.
- Apply the peer review workshop process to explore, develop, and revise original writing.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Creative Writing emphasis, Associate of Science Program Map.*

General Education Requirements

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply towards general education requirements; one credit applies toward program.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

Creative Writing Courses

*All Creative Writing AS majors must take **12 credits** from the following list of Creative Writing courses (*Creative Writing courses may be repeated for up to 6 credits):*

WR 240	Creative Writing: Nonfiction	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3
WR 243	Creative Writing: Script Writing Workshop	3
WR 244	Advanced Creative Writing: Fiction	3

Additional Courses

*Select **10-12 credits** from the following list of courses. Courses taken for the Creative Writing Core do not count towards the 12 credits.*

ENG 201	Shakespeare	4
ENG 202	Shakespeare	4
ENG 204	British Literature: Early	4
ENG 205	British Literature: Middle	4
ENG 206	British Literature: Modern	4
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 221	Children's Literature	4
ENG 253	American Literature: Early	4
ENG 254	American Literature: Modern	4
ENG 257	African American Literature	4
ENG 261	Science Fiction	3
WR 220	Stories of the U.S.-Mexico Border	4
WR 240	Creative Writing: Nonfiction	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3
WR 243	Creative Writing: Script Writing Workshop	3
WR 244	Advanced Creative Writing: Fiction	3

Electives

*Complete **16-18 credits** of any 100-level or higher course.*

	Electives	16-18
	Subtotal: 38-42	

ENG 104Z (p. 156) *and ENG 106Z* (p. 156) *are recommended electives. SPN 101, SPN 102, and SPN 103 are recommended electives for students intending to transfer to OSU's Creative Writing program.*

Total Credit Hours: 90

ENGLISH EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all English emphasis, Associate of Science degree requirements will be able to:

- Describe how literature helps in understanding the human condition.
- Interpret literature through critical reading.
- Participate in activities that encourage personal awareness, growth, and creativity.
- Write and speak effectively about your own and others' ideas.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the English emphasis, Associate of Science Program Map.*

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply towards general education requirements; one credit applies toward program.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) courses.

Liberal Arts Core I: Fine Arts	3
Liberal Arts Core II: Humanities	3
Liberal Arts Core III: Non-Western Culture	3
Liberal Arts Core IV: Social Sciences	3
Liberal Arts Core V	3
Subtotal: 15	

Program Courses

*All English AS students must complete **24 credits** from the following list of courses. At least 4 credits must focus on pre-1800 literature. Pre-1800 courses include ENG 201, ENG 202, ENG 204, and ENG 205.*

ENG 201	Shakespeare	4
ENG 202	Shakespeare	4
ENG 204	British Literature: Early	4
ENG 205	British Literature: Middle	4
ENG 206	British Literature: Modern	4
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 221	Children's Literature	4
ENG 253	American Literature: Early	4
ENG 254	American Literature: Modern	4
ENG 257	African American Literature	4
ENG 261	Science Fiction	3
WR 220	Stories of the U.S.-Mexico Border	4

Electives

Complete 16 credits of any 100-level or higher course.

Electives	16
Subtotal: 40	

ENG 102, ENG 104Z (p. 156)*, ENG 106Z* (p. 156)*, and ENG 145 are recommended electives. SPN 101, SPN 102, and SPN 103 are recommended electives for students intending to transfer to OSU's English program.*

Total Credit Hours: 90

Exercise and Sport Science

https://www.linnbenton.edu/future-students/explore-lb/programs/exercise-sport-science.php

The Health and Human Performance department offers an Exercise and Sport Science emphasis, Associate of Science degree for students planning to transfer to Oregon State University (OSU) to earn a baccalaureate degree in Kinesiology. For students planning on transferring to Western Oregon University, an allied-health program, or another four-year institution, an AAOT (p. 102) with an emphasis in Exercise and Sport Science is often a better option.

The Exercise and Sport Science degrees at LBCC are designed for students to examine the anatomy, physiology, mechanics, and psychology of exercise and sport, as well as the fundamentals of health and fitness. The foundational courses offered prepare students for further studies in kinesiology, athletic training, and allied health fields. Due to the multiple career paths this program offers, it is in the best interest of the student to see a Health and Human Performance advisor immediately and dual enroll at OSU as soon as possible. Faculty highly recommend that all students enroll early in PE 131 Introduction to Health and Physical Education, as this course provides information about career options in health and fitness-related fields and gives guidance on how best to prepare for these careers.

Physical activity is provided through three distinct learning and participation opportunities: lifetime recreational skills; developmental courses that stress conditioning of the body and maintenance of a specific level of physical conditioning; and team sports courses that provide a high level of conditioning and competition. Coursework is provided with a variety of physical education activity classes such as basketball, volleyball, martial arts, golf, weight training, pickleball, and yoga.

Facilities

The department has indoor and outdoor facilities to support exercise, physical education activities, and athletics. The Activity Center contains a fully equipped, double-court gymnasium, as well as a weight training room, a dance and aerobics room, and complete shower facilities. Outdoor facilities include a baseball diamond, tennis/pickleball courts, three sand volleyball courts, a walking track, and a wellness trail.

EXERCISE AND SPORT SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Exercise and Sports Science emphasis, Associate of Science degree requirements will be able to:

- Design an individual, comprehensive program for physical fitness.

- Analyze factors associated with behavior change and motivation.
- Demonstrate a comprehensive knowledge of nutritional needs and weight management factors associated with physical activity, exercise, and sports participation.
- Participate in health screenings and fitness assessments with the ability to interpret and analyze results.
- Analyze the basic physiological responses of the body caused by disease, heredity, and other risk factors.
- Develop knowledge of career pathways and job opportunities in exercise sport science/Pre-therapy.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Exercise and Sport Science emphasis, Associate of Science Program Map.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 121	College Chemistry I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
COMM 111Z	Public Speaking	4
	or	
COMM 218Z	Interpersonal Communication	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Social Science	3
	Subtotal:	**38**

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

COMM 111Z (p. 142), COMM 218Z (p. 143), and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

BI 231	Human Anatomy & Physiology	5
BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
HE 225	Social Determinants of Health	4
MTH 112Z	Precalculus II: Trigonometry	4
PE 131	Intro To Health And Physical Education	3
PE 194H	Foundations of Strength Training and Conditioning	4
PE 212	Sociocultural Dimensions Of Physical Activity	3
PE 231	Lifetime Health & Fitness	3
	Electives	16
	Subtotal:	**52**

Students should choose from the list of approved electives below.

Approved Electives

Approved Program Electives

These courses may be taken to meet specific program requirements at OSU. Students should work with an advisor as soon as possible to select courses that fit their goals.

BI 222Z	Principles of Biology: Organisms	5
	or	
BI 223Z	Principles of Biology: Ecology and Evolution	5
PE 180	PE Activity Course	1
	or	
PE 185	PE Activity Course	1
	or	
PE 190	PE Activity Course	1
PH 201	General Physics	5

Pre-Therapy/Allied Health Electives

Recommended for students interested in Pre-Therapy/Allied Health.

STAT 243Z	Elementary Statistics I	4
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
SOC 204Z	Introduction To Sociology	4

Additional Approved Electives

These courses count towards the AS degree in Exercise and Sports Science (EXSS) at LBCC. They will transfer as lower-division transfer credits but may not fulfill specific program requirements at OSU.

BI 112	Cell Biology for Health Occup	4
CH 112	Chemistry for Health Occupations	5
CH 150	Preparatory Chemistry	3
HE 110	First Aid and CPR	1
HE 151	Drugs in Society	3
HE 207	Stress Management	3
HE 220	Intro to Health Data Analysis	3

HE 267	Wellness Coaching Fundamentals	3
HE 280	CWE Health	1 TO 12
PE 185	PE Activity Course	1
PE 270	Sport Psychology	3

Students can take **3 credits** of HE 280 Cooperative Work Experience (CWE).

Total Credit Hours: 90

History

https://www.linnbenton.edu/future-students/explore-lb/programs/history.php

The History emphasis, Associate of Science degree is designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in History. Students interested in this option are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

Oregon State University offers both a Bachelor of Arts and a Bachelor of Science degree in History. An OSU Bachelor of Arts degree requires that students take two years of a college-level second language. While this is not a requirement of this Associate of Science degree, it is highly recommended that students interested in a Bachelor of Arts complete this coursework at LBCC, or after transfer using the Degree Partnership Program.

Students who focus on history develop strong reading, writing and critical thinking skills, and the ability to organize seemingly independent information into a unified whole (synthesis). These skills are required in order to research and analyze historical events and to apply past lessons of history to today's problems. They are also general skills valued by employers in a wide variety of fields, so a history degree can be a pathway to a wide variety of occupations. Depending on the area of history studied while in school and whether or not a student pursues post-graduate education, career opportunities for students majoring in History currently include the following: teacher/faculty, archivist, writer/researcher, and museum curator/administrator.

HISTORY EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all History emphasis, Associate of Science degree requirements will be able to:

- Demonstrate broad based historical literacy.
- Develop both inquiry and narrative based approaches to understanding the past.
- Recognize the provisional nature of historical knowledge, the disciplinary preference for complexity, and the comfort with ambiguity that the study of History requires.
- Demonstrate familiarity with a range of tools and techniques historians use to analyze the historical record which accounts for its complexity, incompleteness, and its often contradictory nature.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the History emphasis, Associate of Science Program Map.*

General Education Courses

HST 201	US History: Origins to 1820	4
MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3

Subtotal: 36

HST 201 and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Any higher level course with a MTH prefix will also meet the math general education requirement.

Liberal Arts Core Courses

See the degree requirements section for a list of Liberal Arts Core (p. 11)courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3

Subtotal: 15

Program Courses

Complete 15 credits from the following list.

HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 104	World History I: Ancient Civilizations	3
HST 105	World History II: Middle and Early Modern Ages	3
HST 106	World History III: The Modern and Contemporary World	3
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
	Electives	24
		Subtotal: 39

Total Credit Hours: 90

Human Services

https://www.linnbenton.edu/future-students/explore-lb/programs/human-services.php

The Human Development and Family Sciences: Human Services option, Associate of Science degree is designed to prepare students interested in transferring to Oregon State University. Students interested in transferring to Portland State University's School of Social Work or other Oregon universities should work closely with an advisor to complete an Associate of Arts Oregon Transfer (AAOT) degree.

The field of Human Services is broadly defined and approaches the objective of meeting human needs through an interdisciplinary knowledge base. Jobs may focus on prevention, intervention and/or remediation. There is a commitment to improving the overall quality of life for service populations.

The Human Services option is ideal for work in public or private human services. Positions include social worker, youth worker, information and referral specialist, family advocate, volunteer coordinator, probation officer, and others. This option also prepares students to attend graduate school in human development and family sciences, social work, counseling, marriage and family therapy, or public policy. This curriculum allows maximum flexibility for students to tailor their elective courses to populations or ages of particular interest.

The Associate of Science degree is designed to be completed in two years, but this assumes that the entering student has basic skills in writing and math.

HUMAN DEVELOPMENT AND FAMILY SCIENCES: HUMAN SERVICES OPTION, ASSOCIATE OF SCIENCE

Students who successfully complete all Human Development and Family Sciences: Human Services option, Associate of Science degree requirements will be able to:

- Describe the standards, ethics, history and models of the Human Services profession.
- Demonstrate professional demeanor, boundaries, and confidentiality in selected venues.
- Identify typical stages of child development from birth to adolescence.
- Analyze theories and research related to human development.
- Explain the strengths and needs of diverse families.
- Describe the value of data, sampling, and computation in understanding research.
- Apply the principles of effective oral and written communication in selected venues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the HDFS: Human Services emphasis, Associate of Science Program Map.*

General Education Courses

COMM 218Z	Interpersonal Communication	4
HDFS 201	Contemporary Families in The U.S.	3
MTH 105Z	Math in Society	4
PSY 201Z	Introduction to Psychology I	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
		Subtotal: 37

COMM 218Z (p. 143), PSY 201Z (p. 205) and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

HDFS 200	Human Sexuality	3
HDFS 225	Infant and Child Development	4
HDFS 229	School-Age Adolescent Development	4
HDFS 262	Introduction to Human Services	3

HDFS 272	Human Services Practicum	4
HE 100	Introduction to Public Health	4
HE 220	Intro to Health Data Analysis	3
	or	
STAT 243Z	Elementary Statistics I	4
NUTR 225	General Human Nutrition	3
PSY 202Z	Introduction to Psychology II	4
SOC 204Z	Introduction To Sociology	4
	Electives	17
		Subtotal: 53-54

Total Credit Hours: 90-91

Journalism and Mass Communication

https://www.linnbenton.edu/future-students/explore-lb/programs/journalism.php

The Journalism and Mass Communication program emphasizes writing for print and online media. It prepares students for transfer to a four-year college or university and provides entry-level skills for those who want to change careers.

The Journalism program also maintains a co-curricular relationship with The Commuter, LBCC's award-winning student magazine and online information source. The Commuter offers first- and second-year students valuable training and media experience.

Students who plan to transfer to a four-year college or university can obtain a solid foundation of journalism skills at LBCC, from reporting and photography, to writing, editing and online media. Acquiring these skills will prepare them to excel in a bachelor's degree program.

The Journalism and Mass Communication emphasis, Associate of Science Degree is intended for students planning to transfer to Oregon State University (OSU). This transfer degree includes 25 lower-division journalism credits, as outlined below. Graduates can transfer to OSU and major in Digital Communication Arts (in the New Media Communications Program).

The Associate of Arts Oregon Transfer (AAOT) is a general transfer degree and does not include program requirements. It is important that students identify the four-year school they plan to attend. Students are encouraged to contact an advisor at the institution to which they plan to transfer to coordinate classes that meet that institution's program requirements.

Students who plan to transfer to the University of Oregon should pursue the AAOT degree and take journalism to fulfill the Arts and Letters requirement (JN 201, JN 216, JN 217 and/or JN 134). Journalism students also are encouraged to include several terms of the Journalism Lab (JN 215A) and the Design and Production Lab (JN 215B) among their electives to obtain additional writing and editing experience. See the graduation requirements for the AAOT (p. 102).

Facilities for the Journalism program include The Commuter's modern computer-equipped newsroom overlooking the courtyard, as well as access to other computer and electronic imaging labs on campus. The Commuter is online at lbcommuter.com.

Program Requirements

Students who want to succeed in LBCC's Journalism program are encouraged to complete WR 121Z Composition I before enrolling in Journalism courses. Another General Education Requirement for the Journalism major is completion of Math 105Z or a higher-level math course.

JOURNALISM AND MASS COMMUNICATION EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Journalism and Mass Communication emphasis, Associate of Science degree requirements will be able to:

- Understand the role and significance of journalism in a democratic society.
- Recognize news values and apply them in editorial decision-making.
- Research and synthesize facts needed to report on news events and issues.
- Write news and feature articles, as well as online journalism.
- Apply legal and ethical principles in news judgment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Journalism and Mass Communication emphasis, Associate of Science Program Map.*

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3

	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
		Subtotal: 35

COMM 218Z (p. 143): Three credits apply toward general education requirements; one credit applies toward program requirements.

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program requirements.

Liberal Arts Core Courses

See the degree requirements section for a list of Liberal Arts Core (p. 11) *courses.*

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
		Subtotal: 15

Program Courses

JN 134	Intro to Photojournalism	3
JN 201	Media And Society	4
JN 215A	Journalism Lab Taken three times	1
JN 215B	Design & Production Lab taken three times for 6 credits total	2
JN 217	Feature Writing	3
JN 280	CWE Journalism	1 TO 12
WE 202	CWE Seminar	1
	Electives	18
		Subtotal: 40

Students need to take a minimum of **2 credits** of JN 280 Cooperative Work Experience (CWE).

Students are advised to speak with a faculty advisor about recommended elective coursework.

Total Credit Hours: 90

Liberal Studies

The Associate of Science degree in Liberal Studies is for students planning on transferring into the College of Liberal Arts at Oregon State University. It is a good choice for students wishing to design a unique program of study that spans disciplines. It is also a flexible choice for distance education students planning to transfer into the E-campus Liberal Studies program. Students, with their advisor, will develop a plan based on coursework selected from the various disciplines within OSU's College of Liberal Arts, including art, speech communication, history, economics, anthropology, English, foreign languages and literature, new media communications, women's studies, sociology, political science, theatre, philosophy, ethnic studies, psychology and music.

An Oregon State University Bachelor of Arts degree requires that students take two years (six terms) of a college-level foreign language. While this is not a requirement for the Associate of Science, it is highly recommended that you do this coursework during your time at LBCC, or after transfer using the Degree Partnership Program.

LIBERAL STUDIES, ASSOCIATE OF SCIENCE DEGREE

Students who successfully complete an Associate of Science with an emphasis in Liberal Studies will be able to:

- Apply knowledge to specific problems, synthesizing facts, concepts, and principles.
- Access and use a variety of information sources to formulate a research question or to describe a process or event.
- Use various forms and styles of written and oral communication effectively.
- Manage interpersonal relationships effectively.
- Think critically.
- Demonstrate cultural fluency working with people from diverse backgrounds within a global community.

General Education Requirements: 34

See the graduation requirements for the Associate of Science (p. 8) *degree.*

Liberal Arts Core Requirements: 15

See the degree requirements section for a list of Liberal Arts Core (p. 11) *requirements. These are courses required for degrees in the college of Liberal Arts at OSU.*

Program Requirements: 41

In consultation with LBCC and OSU advisors, students will develop an education plan that prepares students to complete the Liberal Studies degree at OSU.

Total Credit Hours: 90

Mathematics

https://www.linnbenton.edu/future-students/explore-lb/programs/mathematics.php

The LBCC Mathematics department offers courses that lead students toward their goals in the college's transfer programs and career and technical programs. The department also offers a variety of developmental courses designed to prepare students for the college-level math courses required in most degree programs (usually either MTH 105Z (p. 181) or MTH 111Z (p. 181)).

The department offers the Mathematics emphasis, Associate of Science degree, designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in mathematics. The AS degree program provides students with a solid foundation in mathematics and the opportunity to develop an emphasis to complement their mathematics degree.

Many students in a bachelor's degree program at four-year schools combine mathematics with another discipline, either as a major emphasis (e.g. statistics, secondary education, mathematical biology, etc.) or as a minor. The mathematics major has the opportunity to take courses focused toward specific interests and career goals. Students completing the Associate of Science with an emphasis in Mathematics at LBCC only need an additional 45 hours of mathematics at OSU, together with university core requirements, to earn the Bachelor of Science degree in mathematics.

There are a variety of employment opportunities for mathematicians in government, industry, and academia. Most mathematicians work in either applied mathematics or in theoretical mathematics. Applied mathematicians spend their time solving problems in science, engineering, computer science, economics, and elsewhere using a variety of mathematical tools. Theoretical mathematicians study and test new mathematical ideas and theories through research.

Statistics, a popular branch of mathematics, is a field where professionals work with large data sets to look for patterns that can benefit society or industry. Actuarial science is another field of study in which mathematicians and statisticians study probability and risk assessment for government and industry.

For students who are interested in studying mathematics, a baccalaureate degree is recommended.

Program Requirements

High school students preparing to enter the Associate of Science degree program are urged to take chemistry, physics, and all the mathematics courses available at their schools.

Students who enter the program with a strong high school mathematics and science background can expect to complete the degree in two years. In particular, it is helpful to start with WR 121Z (p. 215) and MTH 251Z (p. 182) when entering this program. Students who need to take pre-calculus mathematics courses should expect to spend more than two years in the program.

Facilities

The Mathematics Department participates in the operation of the Learning Centers and Math Help Desks at the Albany and Corvallis campuses. Together, these facilities offer individualized assistance, tutoring, and resource materials.

MATHEMATICS EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Mathematics emphasis, Associate of Science degree requirements will be able to:

- Solve mathematical problems using a variety of techniques.
- Apply mathematical concepts and techniques to solve problems in related disciplines and real-life applications.
- Communicate mathematical concepts, processes, and solutions using language appropriate to the audience.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Mathematics emphasis, Associate of Science Program Map.*

General Education Courses

OSU does not allow students to take courses in their chosen discipline to meet these requirements.

COMM 111Z	Public Speaking	4
	or	
COMM 114	Argument and Critical Discourse	3
MTH 251Z	Differential Calculus	4
PH 211	General Physics With Calculus	5
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3

	Scientific Inquiry and Analysis	4
	Social Science	3
		Subtotal: 36-37

COMM 111Z (p. 142) and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applied toward program requirements.

PH 211: Four credits apply toward general education requirements; one credit applies toward program requirements.

Program Courses

MTH 131	Intro to LaTeX	1
STAT 243Z	Elementary Statistics I	4
	or	
STAT 265	Introduction to Statistics for Engineers	4
MTH 231	Elements Of Discrete Math	4
MTH 252Z	Integral Calculus	4
MTH 253Z	Calculus: Sequences and Series	4
MTH 254	Multivariable Calculus	4
MTH 255	Vector Calculus	4
MTH 256	Applied Differential Equations	4
MTH 264	Introduction to Matrix Algebra	2
MTH 264B	Introduction to Matrix Computations	1
	Electives	22
		Subtotal: 54

Students should work closely with a faculty advisor at both LBCC and OSU when selecting elective coursework. Electives and general education courses can be selected to support a minor course of study, major emphasis, or future transfer.

Total Credit Hours: 90-91

Music

https://www.linnbenton.edu/future-students/explore-lb/programs/music.php

The music program at LBCC offers students academic opportunities in music, and gives them a chance to participate in top-quality performing ensembles. On campus, students can work on individual music skills and begin some of the preliminary music courses for transfer to a four-year college or university, and/or enter the work of music business, music production, composition, music therapy, education or musical theater. Individual lessons are available in a variety of instruments. Introduction to Rock Music (MUS 105), History of Hip-Hop and Rap Music (MUS 106), History of Country Music (MUS 107), Music Fundamentals (MUS 101), Music Appreciation (MUS 161) and Music Cultures of the World (MUS 108) support general education degree requirements in the arts.

Students also have the opportunity to perform in several vocal and instrumental ensembles. The LBCC Concert Choir, Chamber Choir, Concert Band, Symphony Orchestra, and Small Ensembles are on campus. Auditions may be required for some performance ensembles. Additionally, co-curricular vocal a cappella ensembles are also available on campus.

The Associate of Science (AS) Degree is designed for students planning to transfer to Oregon State University to pursue a degree in music or liberal arts. Classes that meet music requirements at OSU are listed below.

The AAOT is a general transfer degree and does not include program requirements. It is important that you identify the four-year school you plan to attend. You should review the requirements of the program you plan to study at that institution and take those classes at LBCC. You may want to work with two advisors; one at LBCC and a second at the institution you plan to attend to make sure you are taking the courses that will meet program requirements.

For information on music and related careers, plus the current employment outlook, access the Oregon Career Information System (CIS) located in the Career Center, Takena Hall 101.

Program Requirements

The Music Program requires participation in at least one performance ensemble for at least six terms selected from a choice of Concert Choir, Chamber Choir, Concert Band, Symphony Orchestra, or Small Ensemble. Auditions may be required. Additionally, all students are required to take at least six terms of private lessons instruction at the 2-credit level. A limited number of tuition grants are available for students participating in a performance ensemble. For more information about tuition grants in music, please contact the Music program chair.

The AS degree is designed to be completed in two years, but this assumes that the entering student has tested into WR 121Z (p. 215) Composition I and MTH 105Z (p. 181) Math in Society class.

Most music programs, including OSU and University of Oregon, require transfer students to complete entrance exams in music theory, keyboard skills, and aural skills.

Our offerings in music are designed to prepare you for these exams. Success on these exams will often allow you to test out of some lower-division requirements in the major. Some of the music requirements at Linn-Benton will count as elective credits instead of major requirements upon transfer, but these classes will build the skills you need to succeed in these competitive programs. See an advisor for a list of classes that transfer directly to the school you are interested in.

MUSIC EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete the Associate of Science degree with an emphasis in Music will be able to:

- Perform alone or with others while building a varied repertoire of music.
- Listen to, read, notate, analyze and describe music.
- Understand music in relationship to history, culture and the other arts.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8)*degree. For information on the advised sequence of program courses, see the Music emphasis, Associate of Science Program Map.*

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

MUS 108	Music Cultures of the World	3
MUS 113	Aural Skills I	1
MUS 114	Aural Skills II	1
MUS 115	Aural Skills III	1
MUS 213	Aural Skills IV	1
MUS 214	Aural Skills V	1
MUS 215	Aural Skills VI	1
MUS 121	Literature and Materials of Music I	3
MUS 122	Literature and Materials of Music II	3
MUS 123	Literature and Materials of Music III	3
MUS 221	Literature and Materials of Music IV	3
MUS 222	Literature and Materials of Music V	3
MUS 223	Literature and Materials of Music VI	3
MUS 131	Group Piano I	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 132	Group Piano II	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 133	Group Piano III	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 231	Group Piano IV	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 232	Group Piano V	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 233	Group Piano VI	1
	or	
MP 271	Individual Lessons Piano	1-2
	Electives	4

Note: All of the above courses are each offered once a year. Please see an advisor to register for the appropriate course at the appropriate time.

Completion of piano proficiency is required before transferring to a 4-year college/university. See a piano instructor or an advisor for details.

12 Credits of Individual Lessons

Select 12 credits from the following list of courses.

MP 171	Individual Lessons Piano	1-2
MP 271	Individual Lessons Piano	1-2
MP 172	Individual Lessons Organ	1-2
MP 272	Individual Lessons Organ	1-2
MP 174	Individual Lessons Voice	1-2
MP 274	Individual Lessons Voice	1-2
MP 175	Individual Lessons Guitar	1-2
MP 275	Individual Lessons In Guitar	1-2
MP 176	Individual Lessons Singer/Songwriter	1-2
MP 276	Individual Lessons Singer/Songwriter	1-2
MP 181	Individual Lesson Flute	1-2
MP 281	Individual Lesson Flute	1-2
MP 182	Individual Lessons Tuba	1-2

MP 282	Individual Lessons Tuba	1-2
MP 183	Individual Lessons Clarinet	1-2
MP 283	Individual Lessons Clarinet	1-2
MP 184	Individual Lessons Saxophone	1-2
MP 284	Individual Lessons Saxophone	1-2
MP 185	Individual Lessons Bassoon	1-2
MP 285	Individual Lessons Bassoon	1-2
MP 186	Individual Lessons Trumpet	1-2
MP 286	Individual Lessons Trumpet	1-2
MP 188	Individual Lessons Trombone	1-2
MP 288	Individual Lessons Trombone	1-2
MP 189	Individual Lessons Oboe	1-2
MP 289	Individual Lessons Oboe	1-2
MP 191	Individual Lessons Percussion	1-2
MP 291	Individual Lessons Percussion	1-2
MP 192	Individual Lessons Violin	1-2
MP 292	Individual Lessons Violin	1-2
MP 193	Individual Lessons Viola	1-2
MP 293	Individual Lessons Viola	1-2
MP 194	Individual Lessons Double Bass	1-2
MP 294	Individual Lessons Double Bass	1-2
MP 195	Individual Lessons Cello	1-2
MP 295	Individual Lessons Cello	1-2

Note: Select 1 primary instrument to study while enrolled as a music major. Students cannot take both levels of a single individual lesson course in the same term. Take 6 terms of individual lessons at the 2-credit level while enrolled as a music major. These lessons are offered as needed, so there may be a term when an instrument is not offered, in that case a suitable substitution will be made available.

6 Credits of Performance Ensemble

Select 6 credits from the following list of courses.

MUS 110	Concert Band	1
MUS 210	Concert Band	1
MUS 118	Small Ensemble	1
MUS 218	Small Ensemble	1
MUS 109	Concert Choir	1
MUS 209	Concert Choir	1
MUS 116	Chamber Choir	2
MUS 216	Chamber Choir	2
MUS 117	Symphony Orchestra	1
MUS 217	Symphony Orchestra	1
MP 151	Rehearsal and Performance	1
MP 251	Rehearsal And Performance	1

Note: Students cannot take both levels of a single performance class in the same term. Take at least three terms of ensemble. Most schools will want to see students participate in an ensemble every term of enrollment as a music major. Each level of an ensemble may be taken three times for credit per college guidelines.

Total Credit Hours: 90

MUSIC PRODUCTION AND AUDIO ENGINEERING EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete the Associate of Science degree with an emphasis in Music Production and Audio Engineering will be able to:

- Illustrate the production process using appropriate software/hardware.
- Operate professional audio recording technologies.
- Compose recordings that include elements of music and audio in digital and analog format including processing, editing, mixing, and mastering.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8)*degree. For information on the advised sequence of program courses, see the Music Production and Audio Engineering emphasis, Associate of Science Program Map.*

Gen Ed Requirements

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
		Subtotal: 35

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

MUS 108	Music Cultures of the World	3
MUS 113	Aural Skills I	1
MUS 114	Aural Skills II	1
MUS 115	Aural Skills III	1
MUS 121	Literature and Materials of Music I	3
MUS 122	Literature and Materials of Music II	3
MUS 123	Literature and Materials of Music III	3
MUS 171	Music Production Fundamentals I: Intro to Music Production	3

	Fundamentals and Analog Audio	
MUS 172	Music Production Fundamentals II: Intro to Digital Audio	3
MUS 173	Music Production Fundamentals III: Intro to Live and Studio Recording	3
MUS 271	Audio Engineering I	3
MUS 272	Audio Engineering II	3
MUS 273	Audio Engineering III	3
MUS 131	Group Piano I	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 132	Group Piano II	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 133	Group Piano III	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 231	Group Piano IV	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 232	Group Piano V	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 233	Group Piano VI	1
	or	
MP 271	Individual Lessons Piano	1-2
	Electives	4

6 Credits of Individual Lessons

Select 6 credits from the following list of courses.

MP 171	Individual Lessons Piano	1-2
MP 271	Individual Lessons Piano	1-2
MP 172	Individual Lessons Organ	1-2
MP 272	Individual Lessons Organ	1-2
MP 174	Individual Lessons Voice	1-2
MP 274	Individual Lessons Voice	1-2
MP 176	Individual Lessons Singer/Songwriter	1-2
MP 276	Individual Lessons Singer/Songwriter	1-2
MP 175	Individual Lessons Guitar	1-2
MP 275	Individual Lessons In Guitar	1-2
MP 181	Individual Lesson Flute	1-2
MP 281	Individual Lesson Flute	1-2
MP 182	Individual Lessons Tuba	1-2
MP 282	Individual Lessons Tuba	1-2
MP 183	Individual Lessons Clarinet	1-2
MP 283	Individual Lessons Clarinet	1-2
MP 184	Individual Lessons Saxophone	1-2
MP 284	Individual Lessons Saxophone	1-2
MP 185	Individual Lessons Bassoon	1-2
MP 285	Individual Lessons Bassoon	1-2
MP 186	Individual Lessons Trumpet	1-2
MP 286	Individual Lessons Trumpet	1-2
MP 188	Individual Lessons Trombone	1-2
MP 288	Individual Lessons Trombone	1-2
MP 189	Individual Lessons Oboe	1-2
MP 289	Individual Lessons Oboe	1-2
MP 191	Individual Lessons Percussion	1-2
MP 291	Individual Lessons Percussion	1-2
MP 192	Individual Lessons Violin	1-2
MP 292	Individual Lessons Violin	1-2
MP 193	Individual Lessons Viola	1-2
MP 293	Individual Lessons Viola	1-2
MP 194	Individual Lessons Double Bass	1-2
MP 294	Individual Lessons Double Bass	1-2
MP 195	Individual Lessons Cello	1-2
MP 295	Individual Lessons Cello	1-2

Note: Select 1 primary instrument to study while enrolled as a music major. Students cannot take both levels of a single individual lesson course in the same term. Take 6 terms of individual lessons while enrolled as a music major. These lessons are offered as needed, so there may be a term when an instrument is not offered, in that case a suitable substitution will be made available.

6 Credits of Performance Ensemble

Select 6 credits from the following list of courses.

MUS 110	Concert Band	1
MUS 210	Concert Band	1
MUS 118	Small Ensemble	1
MUS 218	Small Ensemble	1
MUS 109	Concert Choir	1
MUS 209	Concert Choir	1
MUS 116	Chamber Choir	2
MUS 216	Chamber Choir	2
MUS 117	Symphony Orchestra	1
MUS 217	Symphony Orchestra	1
MP 151	Rehearsal and Performance	1
MP 251	Rehearsal And Performance	1

Note: Students cannot take both levels of a single performance class in the same term. Take at least three terms of ensemble. Most schools will want to see students participate in an ensemble every term of enrollment as a music major. Each level of an ensemble may be taken three times for credit per college guidelines.

Total Credit Hours: 90

MUSIC EDUCATION EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete the Associate of Science degree with an emphasis in Music will be able to:

- Perform alone or with others while building a varied repertoire of music.

- Listen to, read, notate, analyze and describe music.
- Understand music in relationship to history, culture and the other arts.
- Describe and discuss principles important to education and, specifically, music education.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8)*degree. For information on the advised sequence of program courses, see the Music Education emphasis, Associate of Science Program Map.*

General Education Courses

ED 216	Purpose/Structure/Function	3
MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
MUS 103	Introduction to Music Education	3
MUS 108	Music Cultures of the World	3
MUS 113	Aural Skills I	1
MUS 114	Aural Skills II	1
MUS 115	Aural Skills III	1
MUS 213	Aural Skills IV	1
MUS 214	Aural Skills V	1
MUS 215	Aural Skills VI	1
MUS 121	Literature and Materials of Music I	3
MUS 122	Literature and Materials of Music II	3
MUS 123	Literature and Materials of Music III	3
MUS 221	Literature and Materials of Music IV	3
MUS 222	Literature and Materials of Music V	3
MUS 223	Literature and Materials of Music VI	3
MUS 131	Group Piano I	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 132	Group Piano II	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 133	Group Piano III	1
	or	
MP 171	Individual Lessons Piano	1-2
MUS 231	Group Piano IV	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 232	Group Piano V	1
	or	
MP 271	Individual Lessons Piano	1-2
MUS 233	Group Piano VI	1
	or	
MP 271	Individual Lessons Piano	1-2

Note: All of the above courses are each offered once a year. Please see an advisor to register for the appropriate course at the appropriate time.

Completion of piano proficiency is required before transferring to a 4-year college/university. See a piano instructor or an advisor for details.

12 Credits of Individual Lessons

Select 12 credits from the following list of courses.

MP 171	Individual Lessons Piano	1-2
MP 271	Individual Lessons Piano	1-2
MP 172	Individual Lessons Organ	1-2
MP 272	Individual Lessons Organ	1-2
MP 174	Individual Lessons Voice	1-2
MP 274	Individual Lessons Voice	1-2
MP 176	Individual Lessons Singer/Songwriter	1-2
MP 276	Individual Lessons Singer/Songwriter	1-2
MP 175	Individual Lessons Guitar	1-2
MP 275	Individual Lessons In Guitar	1-2
MP 181	Individual Lesson Flute	1-2
MP 281	Individual Lesson Flute	1-2
MP 182	Individual Lessons Tuba	1-2
MP 282	Individual Lessons Tuba	1-2
MP 183	Individual Lessons Clarinet	1-2
MP 283	Individual Lessons Clarinet	1-2
MP 184	Individual Lessons Saxophone	1-2
MP 284	Individual Lessons Saxophone	1-2
MP 185	Individual Lessons Bassoon	1-2
MP 285	Individual Lessons Bassoon	1-2
MP 186	Individual Lessons Trumpet	1-2
MP 286	Individual Lessons Trumpet	1-2
MP 188	Individual Lessons Trombone	1-2
MP 288	Individual Lessons Trombone	1-2
MP 189	Individual Lessons Oboe	1-2
MP 289	Individual Lessons Oboe	1-2
MP 191	Individual Lessons Percussion	1-2
MP 291	Individual Lessons Percussion	1-2

MP 192	Individual Lessons Violin	1-2
MP 292	Individual Lessons Violin	1-2
MP 193	Individual Lessons Viola	1-2
MP 293	Individual Lessons Viola	1-2
MP 194	Individual Lessons Double Bass	1-2
MP 294	Individual Lessons Double Bass	1-2
MP 195	Individual Lessons Cello	1-2
MP 295	Individual Lessons Cello	1-2

Note: Select 1 primary instrument to study while enrolled as a music major. Students cannot take both levels of a single individual lesson course in the same term. Take 6 terms of individual lessons at the 2-credit level while enrolled as a music major. These lessons are offered as needed, so there may be a term when an instrument is not offered, in that case a suitable substitution will be made available.

6 Credits of Performance Ensemble

Select 6 credits from the following list of courses.

MUS 110	Concert Band	1
MUS 210	Concert Band	1
MUS 118	Small Ensemble	1
MUS 218	Small Ensemble	1
MUS 109	Concert Choir	1
MUS 209	Concert Choir	1
MUS 116	Chamber Choir	2
MUS 216	Chamber Choir	2
MUS 117	Symphony Orchestra	1
MUS 217	Symphony Orchestra	1
MP 151	Rehearsal and Performance	1
MP 251	Rehearsal And Performance	1

Note: Students cannot take both levels of a single performance class in the same term. Take at least three terms of ensemble. Most schools will want to see students participate in an ensemble every term of enrollment as a music major. Each level of an ensemble may be taken three times for credit per college guidelines.

Total Credit Hours: 92

Nutrition and Foodservice Systems

https://www.linnbenton.edu/future-students/explore-lb/programs/culinary-arts.php

The Nutrition and Foodservice Systems degree is offered in cooperation with Oregon State University and is tailored for the individual seeking a baccalaureate degree in Nutrition and Foodservice Systems with a strong Culinary Arts component. Through a unique articulation agreement students may transition seamlessly to OSU to complete the final two years of a baccalaureate program. A thorough introduction to Culinary Arts, coupled with a strong business core, prepares students for a variety of careers in the hospitality/restaurant industry that focus on serving healthy menu options and using local ingredients.

Students must be at least 18 years old and have a high school diploma or GED. Strong business math skills, effective communication, and a willingness to work directly with customers and staff are essential. They should also be able to perform under pressure, demonstrate manual dexterity, physical stamina, concentration, and a good memory, while maintaining a cheerful, friendly, and outgoing attitude.

In addition to standard college expenses, students will spend approximately $1000 on course fees, uniforms, knives, shoes, books, and other required equipment. Purchases should be made after you have started the program and received guidance from your instructor.

Students gain proficiency with a wide range of standard kitchen equipment and tools. Our program offers industry-focused training, hands-on experience, and the technical skills essential for success in professional kitchens.

Students will concentrate on business and management skills to prepare for the completion of their bachelor's degree at OSU, followed by a strong foundation in culinary skills gained the second year. **Enrollment in the Culinary Program is limited; therefore students must arrange an advising appointment with the Culinary Arts Program Chair prior to pursuing this degree.**

The Associate of Science (AS) Degree is designed for students planning to transfer to Oregon State University. Classes that meet Nutrition and Foodservice Systems degree requirements at OSU are listed below.

NUTRITION AND FOOD SERVICE SYSTEMS EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Nutrition and Foodservice Systems, Associate of Science degree requirements will be able to:

- Manage their individual career prospects.
- Maintain currency in their profession.
- Understand and oversee commercial food production.
- Work with team members and successfully interact with internal and external stakeholders.
- Demonstrate leadership and supervise staff.
- Demonstrate a sense of ownership.

- Understand production controls to ensure financial success of a food establishment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science degree. For information on the advised sequence of program courses, see the Nutrition and Food Service Systems emphasis, Associate of Science Program Map

General Education Courses

BI 234	Microbiology	4
CH 221Z	General Chemistry I	4
COMM 111Z	Public Speaking	4
	or	
COMM 218Z	Interpersonal Communication	4
EC 201Z	Principles of Microeconomics	4
STAT 243Z	Elementary Statistics I	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Subtotal:	**37**

CH 221Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

COMM 111Z (p. 142) or COMM 218Z (p. 143): Three credits apply toward general education requirements; one credit applies toward program.

EC 201Z (p. 151): Three credits apply toward general education requirements; one credit applies toward program.

STAT 243Z (p. **Error! Bookmark not defined.**): A math course approved for core education AND ST 201 (OSU) or ST 351 (OSU) may be substituted.

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

BA 215	Survey of Accounting	4
CA 101	Intro to Culinary Arts	7
CA 102	Patisserie & Baking	8
CA 103	Menu Development & Tournant Cooking	8
CA 111	Foodservice Safety and Sanitation	1
CA 112	Stations, Tools, and Culinary Techniques	3
CA 201	Culinary Arts Career Planning	1
HE 100	Introduction to Public Health	4
EC 202Z	Principles of Macroeconomics	4
	Electives	13
	Subtotal:	**53**

Speak with an advisor about coursework that may be completed at OSU.

Total Credit Hours: 90

Physical Sciences

The Physical Sciences department offers courses in astronomy, chemistry, geology, general sciences, oceanography, and physics. Most courses have laboratory sessions accompanying the lectures. Laboratory sessions are designed to provide students with hands-on experience with the scientific method.

The Associate of Science (AS) Degree is designed for students planning to transfer to Oregon State University (OSU). LBCC offers six AS degrees in the physical sciences: Chemistry, Environmental Sciences, Food and Fermentation Science, General Science, Geology, and Physics. These degree programs provide a strong background in mathematics and physical sciences to students planning to transfer to OSU to complete a baccalaureate degree in chemistry, environmental sciences, food science and sustainable technologies, general science, geology, or physics. Currently, the biological sciences degree is the most appropriate for students interested in pursuing the pre-pharmacy program at OSU.

Students seeking to transfer to an institution other than OSU should pursue an AAOT degree while taking specific physical science and mathematics courses that will transfer to the student's selected college or university. The AAOT is a general transfer degree and does not include program requirements. It is important that you identify the four-year school you plan to attend. You should review the requirements of the program you plan to study at that institution and take those classes at LBCC. You may want to work with two advisors; one at LBCC and a second at the institution you hope to attend to make sure you are taking the courses that will meet program requirements.

Program Requirements

LBCC's physical sciences AS degrees are designed to be completed in two years if the entering student is prepared to take MTH 111Z (p. 181) Precalculus I: Functions, MTH 112Z (p. 181) Precalculus II: Trigonometry or MTH 251Z (p. 182) Differential Calculus (whichever is appropriate for the chosen option), WR 121Z (p. 215) Composition I, CH

221Z (p. 140) General Chemistry I, and CH 227Z (p. 140) General Chemistry I Laboratory. If this is not the case, the student needs to allow extra time to complete this degree.

CH 221Z (p. 140) General Chemistry I and CH 227Z (p. 140) General Chemistry I Laboratory, which are usually taken in the first term of each physical science degree program, requires that the student possess a basic knowledge of chemistry prior to enrolling in the course. In order to fulfill this requirement a student must either:

- Pass the Chemistry placement test, or
- Take a college-level chemistry course (CH 112, CH 121, or CH 150).

Students can test out of CH 150 by taking the chemistry placement test. See the Testing Services webpage for more information.

CHEMISTRY EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/chemistry.php

Students who successfully complete all Chemistry emphasis, Associate of Science degree requirements will be able to:

- Describe and explain chemical and physical phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures, both individually and as a team member, using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Chemistry emphasis, Associate of Science Program Map.*

General Education Courses

CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
MTH 111Z	Precalculus I: Functions	4
PH 201	General Physics	5
	or	
PH 211	General Physics With Calculus	5
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
EC 201Z	Principles of Microeconomics	4
	or	
PSY 202Z	Introduction to Psychology II	4
	or	
	Social Science	3
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Subtotal: 37-38	

EC 201Z (p. 151), PSY 202Z (p. 205), WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

CH 221Z (p. 140) and CH 227Z (p. 140), PH 201 and PH 211: Four credits apply toward general education requirements; one credit applies toward program.

Program Courses

CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
MTH 254	Multivariable Calculus	4
PH 202	General Physics	5
	or	
PH 212	General Physics With Calculus	5
PH 203	General Physics	5
	or	
PH 213	General Physics With Calculus	5
	Electives	5
	Subtotal: 53	

PH 201-PH 203 is for the Biology and Social Science Tracks. PH 211-PH 213 is for the Advanced Chemistry/Biochemistry and Engineering Tracks.

Approved Electives
These courses may be taken to meet specific program requirements at OSU. Students should work with an advisor as soon as possible to select courses that fit their goals.

Advanced Chemistry/Biochemistry Track

MTH 253Z	Calculus: Sequences and Series	4
	or	
MTH 256	Applied Differential Equations	4
	or	
MTH 264	Introduction to Matrix Algebra	2
	and	
MTH 265	Introduction to Series	2
	or	
BI 221Z	Principles of Biology: Cells	5

MTH 256 is for Advanced Chemistry only. BI 221Z (p. 133) is for Advanced Biochemistry only.

Biology Track

BI 221Z	Principles of Biology: Cells	5

Engineering Track

ENGR 211	Statics	4
	or	
MTH 256	Applied Differential Equations	4

Social Science Track

BA 260	Entrepreneurship & Sm Business	4
	or	
ED 216	Purpose/Structure/Function	3

BA 260 & EC 201Z (p. 151) for Business Option.

ED 216 and PSY 202Z (p. 205) for Chemistry Education Option.

Total Credit Hours: 90-91
To aid in transferability, if a student begins the Organic Chemistry sequence at LBCC, the sequence should be completed at LBCC. An ACS national exam is given at the end of CH 243. A student will meet the requirement for organic chemistry upper division credit at OSU with a passing score on the ACS exam. For further details, see OSU's transfer policy: https://chemistry.oregonstate.edu/undergraduate/transfer-students/organic-chemistry-transfer-policies.

Depending on the situation, only as a complete sequence and with a C or better in all courses may be used to fulfill the organic chemistry requirement of many majors, other programs, or the chemistry minor at OSU. Each department or program makes the decision about how the transfer courses are counted toward their graduation requirement.

ENVIRONMENTAL SCIENCES EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/environmental-science.php

Students who successfully complete all Environmental Sciences emphasis, Associate of Science degree requirements will be able to:

- Describe and explain chemical, physical, environmental and/or geological phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Environmental Science emphasis, Associate of Science Program Map.*

Note: Students planning on graduate school should take an entire PH sequence and the 200Z level CH sequence. GS 108 meets the OC 201 requirement at OSU.

General Education Courses

BI 221Z	Principles of Biology: Cells	5
GS 108	Oceanography	4
EC 201Z	Principles of Microeconomics	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression	3

	Foundations	
		Subtotal: 37

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program requirements.

EC 201Z (p. 151), and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program requirements.

Program Courses

BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
CH 121	College Chemistry I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
CH 122	College Chemistry II	5
	or	
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 123	College Chemistry III	5
	or	
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
CSS 205	Soils: Sustainable Ecosystems	4
	or	
G 201	Physical Geology I	4
	or	
G 202	Physical Geology II	4
FW 251	Prin Of Wildlife Conservation	3
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
PH 201	General Physics	5
	or	
PH 211	General Physics With Calculus	5
PH 202	General Physics	5
	or	
PH 212	General Physics With Calculus	5
		Subtotal: 54

Total Credit Hours: 91

FOOD AND FERMENTATION SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/food-fermentation-science.php

Students who successfully complete all Food and Fermentation Science emphasis, Associate of Science degree requirements will be able to:

- Describe and explain chemical and physical phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures, both individually and as a team member, using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Food and Fermentation emphasis, Associate of Science Program Maps.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
COMM 111Z	Public Speaking	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Social Science	3
		Subtotal: 38

COMM 111Z (p. 142)and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program requirements.

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program requirements.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program requirements.

Program Courses

BI 222Z	Principles of Biology: Organisms	5
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
NUTR 225	General Human Nutrition	3
PH 201	General Physics	5
	Electives	5
	Subtotal: 52	

Total Credit Hours: 90

To aid in transferability, if a student begins the Organic Chemistry sequence at LBCC, the sequence should be completed at LBCC. An ACS national exam is given at the end of CH 243. A student will meet the requirement for organic chemistry upper division credit at OSU with a passing score on the ACS exam. For further details, see OSU's transfer policy: https://chemistry.oregonstate.edu/undergraduate/transfer-students/organic-chemistry-transfer-policies.

Depending on the situation, only as a complete sequence and with a C or better in all courses may be used to fulfill the organic chemistry requirement of many majors, other programs, or the chemistry minor at OSU. Each department or program makes the decision about how the transfer courses are counted toward their graduation requirement.

Food Science Option

Recommended elective: BI 223Z (p. 133).

Fermentation Science Option

Students need 5 credits of approved electives (see advisor) to meet the 90-credit requirement for the AS degree. It is recommended that students seek admission to the LBCC/OSU Degree Partnership Program and take all elective credits through the Food Science and Technology Department at OSU.

Enology and Viticulture Option

Recommended elective: CSS 205. It is recommended that students seek admission to the LBCC/OSU Degree Partnership Program and take the remaining credits through the Food Science and Technology Department at OSU. NUTR is not required for the Enology and Viticulture option.

GENERAL SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/general-science.php

Students who successfully complete all General Science emphasis, Associate of Science degree requirements will be able to:

- Describe and explain chemical, physical, and/or geological phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the General Science emphasis, Associate of Science Program Map.*

General Education Courses

BI 221Z	Principles of Biology: Cells	5
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3

	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Social Science	3
		Subtotal: 37

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

BI 221Z (p. 133): Four credits apply toward general education requirements; one credit applies toward program.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program.

Program Courses

BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
MTH 112Z	Precalculus II: Trigonometry	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
	or	
MTH 251Z	Differential Calculus	4
CH 241	Organic Chemistry	4
	or	
G 201	Physical Geology I	4
CH 242	Organic Chemistry	4
	or	
G 202	Physical Geology II	4
CH 243	Organic Chemistry	4
	or	
G 203	Historical Geology	4
PH 201	General Physics	5
	or	
PH 211	General Physics With Calculus	5
PH 202	General Physics	5
	or	
PH 212	General Physics With Calculus	5
PH 203	General Physics	5
	or	
PH 213	General Physics With Calculus	5
		Subtotal: 55

Total Credit Hours: 92

To aid in transferability, if a student begins the Organic Chemistry sequence at LBCC, the sequence should be completed at LBCC. An ACS national exam is given at the end of CH 243. A student will meet the requirement for organic chemistry upper division credit at OSU with a passing score on the ACS exam. For further details, see OSU's transfer policy: https://chemistry.oregonstate.edu/undergraduate/transfer-students/organic-chemistry-transfer-policies.

Depending on the situation, only as a complete sequence and with a C or better in all courses may be used to fulfill the organic chemistry requirement of many majors, other programs, or the chemistry minor at OSU. Each department or program makes the decision about how the transfer courses are counted toward their graduation requirement.

GEOLOGY EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/geology.php

Students who successfully complete all Geology emphasis, Associate of Science degree requirements will be able to:

- Describe and explain chemical, physical, and/or geological phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures, both individually and as a team, using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) degree. For information on the advised sequence of program courses, see the Geology emphasis, Associate of Science Program Map.

General Education Courses

G 201	Physical Geology I	4
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3

	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

Students need to take two terms of CH courses, two terms of PH courses, and one additional CH or PH course to complete a sequence. One of these courses can be used to fulfill the Scientific Inquiry and Analysis requirement.

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

CH 121	College Chemistry I	5
	or	
CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
CH 122	College Chemistry II	5
	or	
CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 123	College Chemistry III	5
	or	
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
G 202	Physical Geology II	4
G 203	Historical Geology	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
PH 201	General Physics	5
	or	
PH 211	General Physics With Calculus	5
PH 202	General Physics	5
	or	
PH 212	General Physics With Calculus	5
ENGR 242	Introduction To GIS	3
	Electives	7
	Subtotal: 55	

Students planning on graduate school should plan on completing both CH and PH sequences. It is recommended that students take the CH 221Z series and the PH 211 series.

Total Credit Hours: 90

PHYSICS EMPHASIS, ASSOCIATE OF SCIENCE

https://www.linnbenton.edu/future-students/explore-lb/programs/physics.php

Students who successfully complete the Associate of Science degree with an emphasis in Physics will be able to:

- Describe and explain physical and chemical phenomena using scientific terminology, concepts, methods, and equipment.
- Communicate scientific ideas in oral, written, graphical, mathematical, and pictorial form.
- Apply scientific principles using the appropriate problem solving techniques.
- Read, interpret, and safely perform laboratory procedures using the appropriate techniques and instrumentation.
- Collect and analyze laboratory data, arrive at reasonable conclusions, and write comprehensive laboratory reports.
- Relate scientific knowledge to societal issues.
- Perform scientific experiments as an effective member of a team.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Physics emphasis, Associate of Science Program Map.*

General Education Courses

CH 221Z	General Chemistry I	4
	and	
CH 227Z	General Chemistry I Laboratory	1
MTH 251Z	Differential Calculus	4
PH 211	General Physics With Calculus	5
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Social Science	3
	Subtotal: 37	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credits applies toward program requirements.

PH 211: Four credits apply toward general education requirements; one credit applies toward program requirements.

CH 221Z (p. 140) and CH 227Z (p. 140): Four credits apply toward general education requirements; one credit applies toward program requirements.

Program Courses

CH 222Z	General Chemistry II	4
	and	
CH 228Z	General Chemistry II Laboratory	1
CH 223Z	General Chemistry III	4
	and	
CH 229Z	General Chemistry III Laboratory	1
MTH 252Z	Integral Calculus	4
MTH 253Z	Calculus: Sequences and Series	4
	or	
MTH 264	Introduction to Matrix Algebra	2
	and	
MTH 265	Introduction to Series	2
MTH 254	Multivariable Calculus	4
MTH 255	Vector Calculus	4
MTH 256	Applied Differential Equations	4
PH 212	General Physics With Calculus	5
PH 213	General Physics With Calculus	5
PH 265	Scientific Computing	3
	Electives	10
	Subtotal:	**53**

Recommended electives: BI 221Z (p. 133), PH 131, or PH 299. Students may also seek admission to the LBCC/OSU Degree Partnership Program and take elective credits through the Physics Department at OSU. Speak to a Physics faculty advisor for additional recommendations or guidance.

Total Credit Hours: 90

Political Science

https://www.linnbenton.edu/future-students/explore-lb/programs/political-science.php

The Political Science emphasis, Associate of Science degree program is designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in Political Science. Students interested in this option are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

An Oregon State University Bachelor of Arts degree requires that students take two years of a college-level second language. While this is not a requirement for this Associate of Science degree, it is highly recommended that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program.

Political scientists study the history, development, and the functioning of political systems. Students pursuing a degree in political science will study, for example, how to understand and predict voter behavior; how political systems influence the economy, society, and culture of a place; and how the media and politicians shape public opinion. Because there is a large emphasis placed on learning how to evaluate evidence, form theories, and think and write critically, political science students are well prepared for a variety of occupations. Depending on the area of political science studied while in school and whether or not a student pursues post-graduate education, career opportunities for students majoring in Political Science currently include jobs such as lawyers, legislative staffers, policy analysts, journalists, teachers, business executives and university professors. Many students go on to advanced study in fields such as law, diplomacy, public policy, and public administration.

POLITICAL SCIENCE EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Political Science, Associate of Science degree requirements will be able to:

- Articulate the interplay between social or natural forces and individuals.
- Apply analytical skills to social or natural phenomena to explain, evaluate, or predict human behavior.
- Understand and respect cultural differences by: articulating an understanding of the historical basis of cultural ideas, behavior, or issues of inequality, or by articulating how their cultural background influences their reactions to or interactions with others.
- Articulate an awareness of issues related to historical or contemporary inequities in U.S. society and propose methods that would facilitate a more equitable society.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Political Science emphasis, Associate of Science Program Map.*

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Any higher level course with a MTH prefix will also meet the math general education requirement.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) *courses.*

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

PS 201	Intro to American Politics/Government	3
PS 204	Intro To Comparative Politics	3
PS 205	Intro International Relations	3
	Electives	31
	Subtotal: 40	

Total Credit Hours: 90

Psychology

https://www.linnbenton.edu/future-students/explore-lb/programs/psychology.php

The Psychology emphasis, Associate of Science degree program is designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in Psychology. Students interested in this option are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

Psychology is the scientific discipline devoted to understanding the human mind -- how it functions, what determines emotions and behavior, and how individuals learn, get motivated, and function in groups. Many psychologists work with individuals in therapeutic settings, but there are other branches of psychology that apply the tools and knowledge of the field to business and industrial settings. These psychologists help businesses best select and train employees, help employees overcome mental health problems, and plan work spaces and work processes. Depending on whether or not a student pursues post-graduate education, career opportunities for students majoring in Psychology currently include jobs in areas such as social services, school and private counseling, clinical work, basic and applied research, private corporations, etc.

PSYCHOLOGY EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Psychology emphasis, Associate of Science degree requirements will be able to:

- Articulate the interplay between social or natural forces and individuals.
- Apply analytical skills to social or natural phenomena to explain, evaluate, or predict human behavior.
- Combine and synthesize psychological concepts and theories to draw reasonable conclusions, develop intelligent skepticism, and critically analyze information.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Psychology emphasis, Associate of Science Program Map.*

General Education Courses

STAT 243Z	Elementary Statistics I	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4

	Scientific Inquiry and Analysis	4
	Social Science	3
		Subtotal: 35

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

MTH 105Z (p. 181) or higher will also meet the math general education requirement.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
		Subtotal: 15

Program Courses

PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 216	Social Psychology	3
	or	
	Electives	3
PSY 219	Intro To Abnormal Psychology	3
	or	
	Electives	3
PSY 220	Thinking Like a Social Scientist	4
	or	
	Electives	4
PSY 225	Quantitative Methods in Psychology and Social Science	4
	or	
	Electives	4
	Electives	18
		Subtotal: 40

Total Credit Hours: 90

Public Health

https://www.linnbenton.edu/future-students/explore-lb/programs/public-health.php

The Health and Human Performance Department offers an Associate of Science (AS) degree and an Associate of Arts Oregon Transfer (p. 102) (AAOT) option in Public Health.These pathways prepare students to be part of the solution for ongoing and emerging public health issues and advocate for health equity in various settings. Graduates will plan, promote, implement, and evaluate programs related to healthy behavior across the lifespan.

Students planning to transfer to Oregon State University for a four-year Public Health BS should follow the LBCC Associate of Science degree path. Students interested in transferring to a different four-year institution, such as Western Oregon University or Boise State University, should consider the AAOT option. All students should work with an LBCC advisor as well as an advisor from the transfer school to make sure the courses transfer and that program requirements are met.

Facilities

The department has indoor and outdoor facilities to support exercise and physical activities that supplement health behaviors. The Activities Center contains a fully equipped, double-court gymnasium, as well as a weight training room, a dance and aerobics room, and complete shower facilities. Outdoor facilities include a baseball diamond, tennis/pickleball courts, three sand volleyball courts, a walking track, and a wellness trail.

PUBLIC HEALTH EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Public Health emphasis, Associate of Science degree requirements will be able to:

- Understand the role of behavioral and social influences on health and disease across the lifespan.
- Recognize health disparities.
- Demonstrate an ability to access and explore career and academic opportunities.
- Research current and future health care organizations and policies.
- Describe multiple areas of mental health issues prominent in public health (e.g., addiction, eating disorders, and stress), including theoretical perspectives and morbidity and mortality rate trends.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8)*degree. For information on the advised sequence of program courses, see the Public Health emphasis, Associate of Science Program Map.*

General Education Courses

COMM 111Z	Public Speaking	4
	or	
COMM 114	Argument and Critical Discourse	3
	or	
COMM 218Z	Interpersonal Communication	4
HE 225	Social Determinants of Health	4

MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 36-37	

COMM 111Z (p. 142), COMM 218Z (p. 143), HE 225, and WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Program Courses

HE 100	Introduction to Public Health	4
HE 210	Intro To Health Services	3
HE 220	Intro to Health Data Analysis	3
HE 225	Social Determinants of Health	4
HE 256	Foundations of Public Health Education and Promotion	4
NUTR 225	General Human Nutrition	3
PE 131	Intro To Health And Physical Education	3
PSY 202Z	Introduction to Psychology II	4
SOC 204Z	Introduction To Sociology	4
	PE Activity Course	1
	Electives	21
	Subtotal: 54	

Students should choose from the list of approved electives below.

Approved Electives

CH 150	Preparatory Chemistry	3
HE 151	Drugs in Society	3
HE 207	Stress Management	3
HE 261	Adult CPR/AED with Pediatric	1
HE 267	Wellness Coaching Fundamentals	3
HE 280	CWE Health	1 TO 12
HE 281	Community Birth Doula	4
HE 282	Foundations of Community Health	6
PE 180	PE Activity Course	1
PE 185	PE Activity Course	1
PE 190	PE Activity Course	1
PE 212	Sociocultural Dimensions Of Physical Activity	3
SPN 101	First Year Spanish I	4
SPN 102	First Year Spanish II	4
SPN 103	First Year Spanish III	4
SPN 201	Second Year Spanish I	4
SPN 202	Second Year Spanish II	4
SPN 203	Second Year Spanish III	4

Total Credit Hours: 90-91

Sociology

https://www.linnbenton.edu/future-students/explore-lb/programs/sociology.php

The Sociology emphasis, Associate of Science degree program is designed for students interested in completing a bachelor's degree at Oregon State University (OSU) in Sociology. Students interested in this option are strongly encouraged to enroll in the Degree Partnership Program (DPP) as there may be lower division courses required by their chosen discipline that are only offered at Oregon State University. Students interested in a general transfer degree should follow the guidelines for the AAOT (p. 102) and work with an advisor from the college/university they plan to transfer to to be sure the appropriate courses are being taken at LBCC.

An OSU Bachelor of Arts degree requires that students take two years of a college-level second language. While this is not a requirement of this Associate of Science degree, it is highly recommended that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program.

Sociologists explore how both individuals and collectivities construct, maintain, and alter social organization in various ways. Sociologists ask about the sources and consequences of change in social arrangements and institutions, and about the satisfactions and difficulties of planning, accomplishing, and adapting to such change. Students with training in Sociology can pursue careers in policy research, teaching, educational and non-profit administration, social work, government, and a variety of other areas that involve a deep understanding of both societal problems and individual behavior.

The Sociology department at OSU offers several paths for sociology majors. LBCC offers two tracks as part of the two-year Associate of Science degree. Students interested in general training in sociology should pursue the General Sociology track. Those interested in a career in Criminal Justice can pursue a bachelor's degree in that field at OSU by taking the Crime and Justice track.

SOCIOLOGY EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Sociology emphasis, Associate of Science degree requirements will be able to:

- Articulate the interplay between social or natural forces and individuals.
- Apply analytical skills to social or natural phenomena to explain, evaluate, or predict human behavior.

- Understand and respect cultural differences by: articulating an understanding of the historical basis of cultural ideas, behavior, or issues of inequality, or by articulating how their cultural background influences their reactions to or interactions with others.
- Articulate an awareness of issues related to historical or contemporary inequities in U.S. society and propose methods that would facilitate a more equitable society.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8)*degree. For information on the advised sequence of program courses, see the Sociology emphasis, Associate of Science Program Map.*

General Education Courses

MTH 105Z	Math in Society	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Any higher level course with a MTH prefix will also meet the math general education requirement.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
	or	
	Electives	4
SOC 206Z	Social Problems	4
	or	
	Electives	4
SOC 281	Introduction to Environment and Society	3
	or	
	Electives	3
	Electives	25
	Subtotal: 40	

Total Credit Hours: 90

Speech Communication

https://www.linnbenton.edu/future-students/explore-lb/programs/communication.php

The Speech Communication program offers students an opportunity to pursue expertise, or preparation for advanced study, in the field of communication. The program offers the Speech Communication emphasis, Associate of Science degree, designed for students interested in completing a bachelor's degree at Oregon State University (OSU). Additionally, the Speech Communication program course offerings support institutional general education degree requirements in Communication. To make the best selection, check the Communication requirement for your particular degree and speak with a program advisor.

To complete the Associate of Science degree and transfer to OSU, students are strongly encouraged to enroll in the Degree Partnership Program during their second year of study and take classes at both LBCC and OSU. Students should work with advisors at both LBCC and OSU. An OSU Bachelor of Arts degree requires that students take two years of a college-level world language. While this is not a requirement of this Associate of Science degree, it is highly advised that students complete this coursework at LBCC, or after transfer using the Degree Partnership Program. It is also recommended for students to take some electives in Journalism and New Media Communication.

In addition to transferring to OSU, students can also transfer to Western Oregon University (WOU) by pursuing an AAOT. Students interested in this option should contact a Speech Communication faculty advisor to discuss the Degree Partnership Program with WOU.

Recent studies confirm that in today’s job market, employers rate effective communication skills as a top priority. Students can receive the Communication Focus Award by receiving a B or higher in COMM 111Z and two other COMM classes of their choosing (COMM 114, COMM 218Z, and/or COMM 226). The Communication

Focus Award is a departmental award that documents a student's training in communication. Additionally, the Speech Communication program offers a civil discourse co-curricular program for students who are interested in developing valuable communication skills. Students also have an opportunity to gain valuable work experience in communication fields through the COMM 280 elective.

SPEECH COMMUNICATION EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Speech Communication emphasis, Associate of Science degree requires will be able to:

- Employ Communication theories, perspectives, principles, and concepts.
- Create messages appropriate to the audience, purpose, and context.
- Demonstrate the ability to ethically accomplish communicative goals.
- Use communication to build and manage relationships with diverse populations.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Speech Communication emphasis, Associate of Science Program Map.*

General Education Courses

COMM 111Z	Public Speaking	4
MTH 105Z	Math in Society	4
	or	
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Difference, Power, and Oppression Foundations	3
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 36	

COMM 111Z (p. 142): Three credits apply towards general education requirements; one credit applies toward program.
WR 227Z (p. 216): Three credits apply towards general education requirements; one credit applies toward program.

Liberal Arts Core Courses

See the degree requirements section for a list of Liberal Arts Core courses.

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4
COMM 226	Intercultural Communication	3
	Electives	29
	Subtotal: 39	

SPN 101, SPN 102, and SPN 103 are recommended electives for students intending to complete a Bachelors of Arts degree at OSU. Additional recommended electives: Any JN course, any NMC course, COMM 198, COMM 298, and COMM 280.

Total Credit Hours: 90

Women Gender and Sexuality Studies

https://linnbenton.edu/future-students/explore-lb/programs/wgss.php

The Women, Gender, and Sexuality Studies major represents multidisciplinary approaches to the study of gender and sexuality, particularly as they intersect with race, ethnicity, class, culture, nation, and ability. The curriculum incorporates feminist theory and research to better understand differences in power and privilege and to contribute to practices that help transform our world. Many classes incorporate an applied component, and students are encouraged to consider the ways knowledge and community engagements help promote social justice in local and global communities.

The Women, Gender, and Sexuality Studies emphasis, Associate of Science degree is intended for students who plan to transfer to Oregon State University (OSU) and major in Women, Gender, and Sexuality Studies. The Degree Partnership Program (DPP) is an arrangement between LBCC and Oregon State that allows students to take classes at both institutions. Students should meet with an advisor in the Women, Gender, and Sexuality Studies Department to learn more about their options with DPP.

Students who intend to transfer to an institution other than Oregon State University should follow the degree requirements for the Associate of Arts Oregon Transfer (AAOT). It is important that students identify the institution that they plan to attend. An advisor in the Women, Gender, and Sexuality Studies department can help students select the classes at LBCC that will transfer to their chosen institution. Students are encouraged to also work with an advisor from the transfer institution.

WOMEN, GENDER, AND SEXUALITY STUDIES EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all Women, Gender, and Sexuality Studies, Associate of Science degree requirements will be able to:

- Identify and explain the ways in which our lived experiences and social institutions are structured through the intersections of race, gender, class, sexuality, ability, age, religion, culture, and nation.
- Analyze current social and political situations from multiracial, transnational, and feminist perspectives.
- Articulate the ways in which systems of power, privilege, and oppression shape our experiences as individuals and members of communities.
- Develop skills in critical analysis.
- Develop skills and effective strategies for advancing social justice.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the Women, Gender, and Sexuality Studies emphasis, Associate of Science Program Map.*

General Education Courses

	Arts and Humanities - General	3
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
	Difference, Power, and Oppression Foundations	3
	Quantitative Literacy and Analysis	4
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Writing Foundations	4
	Writing Elevation	3
		Subtotal: 34

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) *courses.*

	Liberal Arts Core I: Fine Arts	3
	Liberal Arts Core II: Humanities	3
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
		Subtotal: 15

Program Courses

QS 262	Introduction to Queer Studies	3
WS 223	Intro to Women, Gender, Sexuality Studies	3
WS 225	Disney: Gender, Race, Empire	3
WS 280	Global Women	3
	Electives	29
		Subtotal: 41

Total Credit Hours: 90

World Languages

https://www.linnbenton.edu/future-students/explore-lb/programs/world-languages.php

The World Languages emphasis, Associate of Science degree is intended for students who plan to transfer to Oregon State University (OSU) and major in World Languages. Currently, Spanish is the only language available at LBCC for students who wish to pursue a world languages degree. Transfer credit language classes earn four transfer credits each and emphasize all language skills, helping students to build proficiency. Students who want to pursue an AS degree in a world language other than Spanish may study that language through the LBCC/OSU Degree Partnership Program. The Degree Partnership Program (DPP) is an arrangement between LBCC and Oregon State that allows students to take classes at both institutions. Students should meet with an advisor in the World Languages Department to learn more about their options with DPP.

The World Languages department at LBCC also offers classes designed for heritage speakers of Spanish. Heritage speakers are defined as someone who grew up hearing and speaking Spanish, but they may not have reached the competence and literacy of native speakers. Typically, heritage speakers have had little exposure to writing and reading in their heritage language, so these skills may need to be developed. Likewise, heritage speakers may function well in everyday, common interactions, but may struggle expressing themselves in

more academic or formal settings. LBCC offers a sequence for Heritage Speakers (SPN 214, SPN 215, and SPN 216) which can be taken in lieu of the second-year Spanish sequence (SPN 201, SPN 202, and SPN 203). The Heritage Speakers sequence fulfills the Bachelor of Arts second language requirement at OSU. After transferring, heritage speakers have the opportunity to continue with 300- and 400-level heritage speakers classes (and a minor) through OSU's Center for Latino/a Studies and Engagement. For more information, contact program faculty.

Students who intend to transfer to an institution other than Oregon State University should follow the degree requirements for the Associate of Arts Oregon Transfer (p. 102) (AAOT). It is important that students identify the institution that they plan to attend. An advisor in the World Languages department can help students select the classes at LBCC that will transfer to their chosen institution. Students are encouraged to also work with an advisor from the transfer institution.

In addition to our Spanish credit classes, LBCC offers a wide variety of non-credit conversational world languages to meet community interests and the needs of local employers. Conversational language classes are offered through Community Education centers in Albany, Corvallis and Lebanon.

STUDY ABROAD

LBCC has a summer program to study Spanish at the Monteverde Institute in Costa Rica. For more information, contact program faculty.

WORLD LANGUAGES EMPHASIS, ASSOCIATE OF SCIENCE

Students who successfully complete all World Languages, Associate of Science degree requirements will be able to:

- Achieve intermediate-low to intermediate language proficiency in speaking, listening, reading and writing (proficiency levels are defined by the American Council on the Teaching of Foreign Languages).
- Effectively discuss opinions and beliefs in Spanish.
- Demonstrate a reasonable understanding of the perspectives (beliefs, attitudes, values), social practices, and cultural products (for example, art, history, literature) of the Spanish-speaking world.
- Comprehend clearly articulated conversations on everyday topics in standard Spanish at the ACTFL intermediate level.
- Reflect on their own social values and compare them to the culture(s) they are studying.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Science (p. 8) *degree. For information on the advised sequence of program courses, see the World Languages emphasis, Associate of Science Program Map.*

General Education Courses

WR 121Z	Composition I	4
WR 227Z	Technical Writing	4
	Arts and Humanities - General	3
ENG 209	World Lit: Non-Western Lit of the Americas	4
	or	
	Arts and Humanities - Global	3
	Communication, Media, and Society	3
WR 220	Stories of the U.S.-Mexico Border	4
	or	
	Difference, Power, and Oppression Foundations	3
	Quantitative Literacy and Analysis	4
	Scientific Inquiry and Analysis	4
	Scientific Inquiry and Analysis	4
	Social Science	3
	Subtotal: 35-37	

WR 227Z (p. 216): Three credits apply toward general education requirements; one credit applies toward program.

Liberal Arts Core Courses

See the degree requirements section for a list of the Liberal Arts Core (p. 11) *courses.*

	Liberal Arts Core I: Fine Arts	3
ENG 215	Latina/o/x Literature	3
	or	
	Liberal Arts Core II: Humanities	3
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
	or	
	Liberal Arts Core III: Non-Western Culture	3
	Liberal Arts Core IV: Social Sciences	3
	Liberal Arts Core V	3
	Subtotal: 15	

Program Courses

SPN 101	First Year Spanish I	4
SPN 102	First Year Spanish II	4
SPN 103	First Year Spanish III	4
SPN 201	Second Year Spanish I	4
	or	
SPN 214	Spanish for Heritage Speakers I	4
SPN 202	Second Year Spanish II	4

	or	
SPN 215	Spanish for Heritage Speakers II	4
SPN 203	Second Year Spanish III	4
	or	
SPN 216	Spanish For Heritage Speakers III	4
	Electives	16
		Subtotal: 40

Total Credit Hours: 90-92

Associate of Applied Science (AAS) Degrees and Certificates

The Associate of Applied Science (AAS) two-year degree is intended to prepare students for direct entry into the workforce upon graduation. Awarded to students who complete the requirements of a specified, two-year career and technical program, Associate of Applied Science degrees are offered in a number of different interest areas. Some AAS degrees may have approved options, noted on student transcripts upon completion. Options within a curriculum constitute a part of the total coursework required and offer a specialized focus.

Certificates are awarded to students who complete specific requirements within a career and technical major and require a specified number of credit hours. Certificates can stand alone or be embedded in related Associate of Applied Science degrees. Students must earn a GPA of at least 2.00 in required courses to earn a one-year certificate.

Certificates of Completion are career technical in nature and are designed to prepare students for entry into the workforce. Certificates of Completion can be a one-year or a less-than-one-year (LTOY) program.

Career Pathway Certificates of Completion are Oregon community college credentials comprised of 12-44 credits wholly contained in an approved Associate of Applied Science (AAS) degree or stand-alone one-year Certificate of Completion (45+ credits). Career pathways help guide students towards a specific profession by providing a defined list of courses offering expert training in a variety of industries.

ASSOCIATE OF APPLIED SCIENCE DEGREE REQUIREMENTS

To be awarded an AAS degree, students must:

- Complete a minimum of 90 credits of college-level coursework (see individual degrees for specific credit requirements). A maximum number of 24 non-traditional credits beyond any required by a given program can be used towards a degree. See the non-traditional credit section of this catalog for more information.
- Complete at least 24 credits at LBCC, 15 of which must be in the major field. Note: Credits granted for prior learning cannot be applied to this requirement.
- Have a minimum cumulative GPA of 2.0 at the time the AS degree is awarded.
- Complete a minimum of 70 percent of all credits attempted. Grades of “F,” “NP,” “IN” and “W” are non-completion grades. The maximum number of "P" credits allowed is 16. This limit does not include courses only offered P/NP.

To be awarded a One-Year Certificate, students must:

- Earn all credits required for certificate completion (see individual certificates for specific credit requirements). A maximum of 12 prior learning credits may be used to meet this requirement.
- Complete at least 12 credits at LBCC. Note: Credits granted for prior learning cannot be applied to this requirement.
- Have a minimum cumulative GPA of 2.0 at the time the Certificate is awarded.
- Grades of “F,” “NP,” “IN” and “W” are non-completion grades. The maximum number of "P" credits allowed is 8. This limit does not include courses only offered P/NP.

To be awarded a Less-Than-One-Year Certificate, students must:

- Earn all credits toward the certificate at LBCC. Note: Credits granted for prior learning cannot be applied to this requirement.
- Have a minimum cumulative GPA of 2.0 at the time the Certificate is awarded.

Related Instruction Outcomes

Listed below are the related instruction course areas for the AAS degree and One-Year Certificates. Specific courses that meet these requirements are listed in this catalog and are available from program advisors. No single course may be taken to satisfy more than one related instruction area.

Computation

Upon successful completion of the Computation related instruction requirement, students will be able to:

- Perform basic mathematical calculations to obtain exact answers and determine whether the solution is reasonable.
- Use mathematical principles and concepts to model and solve problems applicable to the discipline.
- Interpret and analyze information relevant to the discipline such as graphs, charts, tables, and mathematical symbols.
- Communicate mathematical concepts, processes, and results within context or in writing.

Communication

Upon successful completion of the Communication related instruction requirement, students will be able to:

- Demonstrate effective written and oral communication skills.
- Demonstrate the ability to keep accurate records, prepare reports, and/or complete documentation forms.
- Organize and deliver discipline related presentations.

Human Relations

Upon successful completion of the Human Relations related instruction requirement, students will be able to:

- Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

RELATED INSTRUCTION REQUIREMENTS

The purpose of related instruction is to ensure minimum, essential skills in the areas of communication, computation, and human relations which align with and support program goals or outcomes. Related Instruction courses are a required component of all AAS degree and One-Year Certificate programs. Related Instruction can be satisfied through stand-alone courses or through embedded
instruction. Refer to individual program details for required Related Instruction courses. Where options exist, students should work with a department advisor to select from the approved courses listed in this catalog.

All Related Instruction courses must be passed with a grade of "C" or better.

Computation (3 Credits)

A minimum of 3 credits of Computation is required. Some programs may list a specific Computation requirement. Refer to program curriculum. If a specific course is not listed, take one mathematics course, MTH 075 or higher.

Communication (3 Credits)

A minimum of 3 credits of Communication is required. Some programs may list a specific Communication requirement. Refer to program curriculum. If a specific course is not listed, select one course from the following:

COMM 100Z	Introduction to Communication	4
COMM 111Z	Public Speaking	4
COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4
IN4. 164	Technical Writing for CTE	3
WLD 151	Technical Writing For Welders	3
WR 115	Intro to College Writing	3
WR 121Z	Composition I	4
WR 227Z	Technical Writing	4

Human Relations (3 Credits)

A minimum of 3 credits of Human Relations is required. Some programs may list a specific Human Relations requirement. Refer to program curriculum. If a specific course is not listed, select one course from the following:

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
ANTH 232	Peoples of the World - North America	3
ANTH 240	Introduction to Biological Anthropology	4
ART 102	Understanding Art	3
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ART 207	Indigenous Art Of The Americas	3
AUT 643	Customer Service for Auto Tech	3
CST 226	Customer Service For Heavy Equipment Technicians	3
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
EG4. 471	Capstone Project	3
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 257	African American Literature	4
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
GEOG 203	World Reg Geography: Asia	3
GEOG 204	Wrld Reg Geo: Africa/Mid East	3
HDFS 201	Contemporary Families in The U.S.	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4

HST 157	Hist of Middle East & Africa	3
HST 158	History of Latin America	3
HST 159	History of Asia	3
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
HUM 101	Humanities: Prehistory-Mid Ages	3
HUM 102	Humanities: Renaissance-Enlight	3
HUM 103	Hum: Romantic Era-Cont Society	3
HVE 226	Customer Service for Heavy Equipment Technicians	3
MT3. 802	Service Skills for Technicians	3
MUS 105	Introduction to Rock Music	3
MUS 108	Music Cultures of the World	3
MUS 161	Music Appreciation	3
PHL 201	Intro To Philosophy	3
PHL 202	Elementary Ethics	3
PS 205	Intro International Relations	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 215	Intro Developmental Psychology	3
R 102	Religions of the Western World	3
R 103	Religions of Eastern World	3
R 202	Intro to Religious Studies	3
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
SOC 206Z	Social Problems	4
SOC 222	Sociology of the Family	3
SPN 201	Second Year Spanish I	4
SPN 202	Second Year Spanish II	4
SPN 203	Second Year Spanish III	4
SPN 214	Spanish for Heritage Speakers I	4
SPN 215	Spanish for Heritage Speakers II	4
SPN 216	Spanish For Heritage Speakers III	4
WLD 152	Teamwork Skills For Welders	3
WS 280	Global Women	3

Accounting Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/accounting-technology.php

The associate degree or certificate in accounting technology is designed to prepare students for a variety of jobs in the field of accounting. In smaller offices, accountants handle all finances. They record accounting transactions and reconciliations, prepare bank deposits, and prepare financial statements and other reports for managers and supervisors. In larger offices and accounting departments, the jobs are more specialized. Entry-level positions enter the details of transactions, find the totals for accounts, compute interest charges, and monitor loans, as well as maintain responsibility for accounts payable and receivable. More experienced accountants may be responsible for payroll, cost accounting, and the entire accounting cycle. Most accountants use computerized accounting software. Experienced workers may enter transactions on the computer and review computer generated reports. Accountants must ensure that their actions comply with generally accepted accounting principles, federal and state laws, and company policies and procedures. They need knowledge in accounting, economics, tax and law; general office procedures; mathematics; written and oral communication; computer hardware and software; and customer service skills.

Program Requirements

The following programs are available to students who are interested in accounting but do not desire a four-year degree: a One-year Certificate in Accounting Clerk and a two-year Associate of Applied Science degree in Accounting Technology with two tracks — a Business Track and a Healthcare Track. Both programs prepare students for entry-level positions in bookkeeping and accounting. Graduates of the two-year program should be able to enter the field at a higher level and advance further. Students who wish to become Certified Public Accountants (CPAs) or Certified Management Accountants (CMAs), or to pursue further study, should complete the Business Management, Associate of Science (p. 21) degree described in this catalog.

Students entering either program should have a high interest in business operations, working in a team environment, and demonstrate attention to detail and familiarity with computer software. The Accounting Technology AAS, Healthcare Track incorporates both the healthcare and accounting professions. Students should have sufficient math and writing skills to enroll in MTH 095 Intermediate Algebra and WR 115 Intro to College Writing.

ACCOUNTING TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Accounting Technology, Associate of Applied Science degree requirements will be able to:

- Accurately compile, generate, and interpret accounting information as required by an organization.
- Successfully utilize computer technology to create documents and report information.

- Analyze, interpret, and communicate accounting information with stakeholders at a level appropriate to the stakeholder's understanding.
- Work with team members and successfully interact with internal and external stakeholders. Assume a leadership role.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Accounting Technology, Business Track and Accounting Technology, Health Track Program Maps.*

Communication

COMM 218Z	Interpersonal Communication	4

Computation

MTH 095	Intermediate Algebra	4
	or	
MTH 075	Variables and Linear Equations	4

Human Relations

BA 224	Human Resource Management	3
	or	
BA 285	Organizational Behavior	4

BA 224 satisfies the Human Relations related instruction requirement for the Business Track.

BA 285 satisfies the Human Relations related instruction requirement for the Health Track.

Program Courses

Choose and complete a listed Track's requirements in addition to the Program Courses.

BA 101Z	Introduction to Business	4
BA 111	Practical Accounting I	4
BA 112	Practical Accounting II	4
BA 113	Practical Accounting III	4
BA 169Z	Data Analysis Using Microsoft Excel	4
BA 177	Payroll Accounting	3
BA 218	Personal Finance Planning	3
BA 226Z	Introduction to Business Law	4
BA 228	Computerized Accounting	3
BA 256	Income Tax Accounting I	4
	Track Courses	41-42

Students should complete the requirements for one Accounting Technology track option listed below.

Accounting Technology Track Options

Business Track

BA 120	Professional Accounting I	3
BA 121	Professional Accounting II	3
BA 122	Professional Accounting III	3
BA 201	Applied Business Analytics	4
BA 216	Cost Accounting	3
BA 219	Governmental Accounting	3
BA 223	Principles of Marketing	4
BA 257	Income Tax Accounting II	4
BA 280A	CWE Accounting Technology	1 TO 12
HD 208A	Career Planning	1 TO 3
WR 115	Intro to College Writing	3
	Electives	5

Students on Business Track need to take a minimum of **4 credits** of BA 280A CWE and a minimum of **3 credits** of HD 208A Career Planning.

Approved Electives

BA 211Z	Principles of Financial Accounting	4
BA 213Z	Principles of Managerial Accounting	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
WR 121Z	Composition I	4

Health Track

BA 120	Professional Accounting I	3
BA 121	Professional Accounting II	3
BA 122	Professional Accounting III	3
BA 216	Cost Accounting	3
BA 280A	CWE Accounting Technology	1 TO 12
CRS 101	Coding I	5
CRS 102	Coding II	5
CRS 103	Coding III	5
CRS 110	Medical Insurance Procedures	4
CRS 126	Medical Documentation for Coders	3
CRS 131	Medical Terminology and Body Systems I for Coding and Reimbursement	3
CRS 211	CPC/CMA Test Taking Strategies	1

Students on Health Track need to take a minimum of **3 credits** of BA 280A CWE.

Total Credit Hours: 90

ACCOUNTING CLERK, ONE-YEAR CERTIFICATE

Students who successfully complete all Accounting Clerk, One-Year Certificate program requirements will be able to:

- Successfully function in an entry-level position in the following areas: Accounts Payable, Accounts Receivable, General Ledger, or Payroll.
- Utilize basic accounting software as well as spreadsheets, databases, and word processing.

- Analyze, interpret, and communicate with peers and management regarding accounting information.
- Successfully work with a team and interact with team members.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Accounting Clerk, One-Year Certificate Program Map.*

Communication		
COMM 218Z	Interpersonal Communication	4
Computation		
MTH 095	Intermediate Algebra	4
	or	
MTH 075	Variables and Linear Equations	4
Human Relations		
BA 224	Human Resource Management	3
	or	
BA 285	Organizational Behavior	4
Program Courses		
BA 101Z	Introduction to Business	4
BA 111	Practical Accounting I	4
BA 112	Practical Accounting II	4
BA 113	Practical Accounting III	4
BA 169Z	Data Analysis Using Microsoft Excel	4
BA 177	Payroll Accounting	3
BA 206	Principles of Management	3
BA 226Z	Introduction to Business Law	4
BA 228	Computerized Accounting	3
BA 256	Income Tax Accounting I	4

Total Credit Hours: 48-49

Animal Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/animal-science.php

LBCC is the only community college in the Willamette Valley with an Animal Technology program. The program uses the community as a natural instructional laboratory and provides students with knowledge and skills useful for working in production livestock occupations and in entering into livestock-related fields. Some coursework may transfer to a four-year institution.

Farm and ranch workers need to have a basic understanding of livestock feeding and nutrition, reproduction, health care and disease prevention, animal identification methods, farm accounting, and be able to make prudent decisions based on current economics. Besides a basic understanding of the aforementioned subjects, they may also need the practical skills to operate machinery and repair fencing, corrals, barn structures, and watering systems.

Owners of large farms may hire farm managers to oversee most farm activities or focus on a single activity, such as calving. These managers supervise and direct other workers and many make critical production decisions. They may set farm production goals and identify appropriate marketing strategies to maximize profitability. They consider weather predictions, animal disease potential in their area, commodity pricing, and federal farm programs. They must decide when to plant, what to grow, and what type of equipment and supplies to purchase. To start new ventures, farmers and farm managers negotiate and secure bank loans. They must keep good financial records and understand federal and state regulations.

LBCC's Animal Technology courses are designed to provide practical learning experiences through hands-on laboratory sessions. Students already employed in specific agricultural fields can upgrade or add to their skill set.

Program Requirements

The Animal Technology program is designed to be completed in two years.

In preparation for the Animal Technology program, high school students should study mathematics, life sciences and physical sciences. Program completion requires a minimum of four credits of math and eight credits of biology, plus other Related Instruction courses, and courses related to speech/oral communication, first aid.

Students can take Related Instruction courses at night, but the technical classes are only offered during the day. Part-time enrollment is common; students may start in the middle of the school year or enroll for any portion of the program.

Facilities

Classes are conducted in modern, well-equipped classrooms and laboratories. Emphasis is placed on hands-on experience, and many classes utilize the local livestock producers for in-the-field laboratory exercises. Computers, microscopes and other modern lab equipment are available for student use. The college supplies equipment and tools for use during lab sessions.

ANIMAL TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Animal Technology, Associate of Applied Science degree requirements will be able to:

- Effectively apply multiple-specie animal husbandry skills and concepts within the livestock industry.
- Effectively research issues related to nutrition, management, marketing, health and reproduction.
- Interact with professionals unique to the industry using appropriate vocabulary.
- Apply business principles and accounting skills for successful money management and record-keeping.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Animal Technology, Associate of Applied Science Program Map.*

Communication		
WR 121Z	Composition I	4
Computation		
MTH 075	Variables and Linear Equations	4
Human Relations		
	Human Relations	3

See the AAS degree requirements section (p. 56) for a list of courses approved to satisfy the Human Relations requirement.

Program Courses		
AG 111	Computers in Agriculture	3
ANS 121	Animal Science	4
ANS 207	Careers in Animal Agriculture	1
ANS 210	Feeds and Feed Processing	4
ANS 211	Applied Animal Nutrition	3
ANS 231	Livestock Evaluation	3
ANS 278	Genetic Improvement: Livestock	3
AREC 211	Management in Agriculture	4
AREC 221	Marketing in Agriculture	3
AT 156	Livestock Disease & Parasites	3
BI 101	General Biology: Ecology and Biodiversity	4
BI 102	General Biology: Cell and Molecular Biology	4
CSS 205	Soils: Sustainable Ecosystems	4
CSS 210	Forage Crops	3
HE 252	First Aid	3
	Communication	3
	Approved Electives or CWE	15
Select three of the following courses:		
ANS 215	Beef/Dairy Industries	4
ANS 216A	Applied Sheep Production	4
ANS 216B	Applied Swine Production	4
ANS 220	Introductory Horse Science	4
ANS 227	Artificial Insemination	4

Communication course requirement: Select from courses with the COMM prefix.

Approved Electives: ANS, AG, AREC, AT, or CSS prefix courses not listed as program requirements. Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90

Animal Technology: Horse Management

https://www.linnbenton.edu/future-students/explore-lb/programs/animal-science.php

The Agricultural Sciences Department offers a two-year Associate of Applied Science degree in Horse Management. The AAS degree provides students with knowledge and skills useful in entering occupations in the horse industry. Some of the coursework may transfer to a four-year institution. The program uses the local horse community as a natural instructional laboratory, and the courses provide extensive, practical, hands-on experience. The program maintains and operates a small training and breeding facility at which a limited number of student horses may be boarded. The college's seven-acre horse facility is located 1.5 miles from campus.

Job opportunities are varied, depending on the specific interest of the student. Typical jobs open to students completing the Horse Management degree program include equine veterinary assistant, exercise rider, apprentice trainer, facility manager, foaling attendant, breeding assistant and general farm hand. Many students are already working on family horse ranches or at agricultural jobs when they enter the program.

Program Requirements

Students entering the Animal Technology: Horse Management program should have a firm background in life and physical sciences and should be prepared to take courses in mathematics and biology.

A mandatory riding evaluation is given at the start of the program to enable proper placement in courses.

The Animal Technology: Horse Management program is designed to be completed in two years. Program completion requires a minimum of 4 credits of math and 8 credits of biology, plus Related Instruction courses such as English composition, speech, and social sciences.

Facilities

Classes are conducted in modern well-equipped classrooms and laboratories. Emphasis is placed on hands-on experience, and many classes utilize the local producers for laboratory exercises. In addition, there are computers, microscopes, and other modern lab equipment available for student use.

The training classes are conducted in a modern barn with indoor arena, 28 box stalls and washing and grooming facilities. Students bringing horses to school may board them at the LBCC barn.

ANIMAL TECHNOLOGY: HORSE MANAGEMENT, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Animal Technology: Horse Management, Associate of Applied Science degree requirements will be able to:

- Successfully start a young horse and understand basic training concepts necessary to continue training through an advanced level.
- Manage a breeding herd and apply scientific concepts to a breeding program.
- Research and apply business, health and management concepts necessary to maintain a successful equine facility.
- Interact with professionals unique to the equine industry using appropriate terminology.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) degree. For information on the advised sequence of program courses, see the Animal Technology, Associate of Applied Science Program Map.

Communication

WR 121Z	Composition I	4

Computation

MTH 075	Variables and Linear Equations	4

Human Relations

	Human Relations	3

See the AAS degree requirements section (p. 56) for a list of approved Human Relations courses.

Program Courses

ANS 121	Animal Science	4
ANS 210	Feeds and Feed Processing	4
ANS 211	Applied Animal Nutrition	3
ANS 220	Introductory Horse Science	4
ANS 221	Equine Conformation and Performance	2
ANS 222	Young Horse Training	2
ANS 223	Equine Marketing	2
ANS 278	Genetic Improvement: Livestock	3
AT 143	Intro to Horse Management	2
AT 154	Equine Business Management	3
AT 156	Livestock Disease & Parasites	3
AT 163	Schooling the Horse I	3
AT 164	Schooling The Horse II	3
AT 277A	Horse Breeding Management	2
AT 277B	Horse Breeding Management Lab	2
AG 280B	CWE Animal Tech	1 TO 12
BI 101	General Biology: Ecology and Biodiversity	4
BI 102	General Biology: Cell and Molecular Biology	4
CSS 210	Forage Crops	3
HE 252	First Aid	3
	Communication	3
	Approved Electives	18

Students need to take a minimum of **2 credits** of AG 280B Cooperative Work Experience (CWE).

Communication course requirement: Select from courses with the COMM prefix.

Approved Electives: ANS, AG, AREC, or CSS prefix courses not listed as program requirements, or AT 263 or AT 264. Other elective courses may be approved by program faculty advisors.

Total Credit Hours: 90

Apprenticeship

https://www.linnbenton.edu/current-students/apprenticeships/index.php

The Apprenticeship program provides training in accordance with the Apprenticeship and Training Laws for the State of Oregon. Courses present technical instruction for the trades and are intended to complement on-the-job (OTJ) training requirements. Each trade has a Joint Apprenticeship Training Committee (JATC) or a Trades Apprenticeship Training Committee (TATC) that outlines the procedure to become a journey-person. The process typically requires two to five years of supervised OTJ experience in various aspects of the trade in conjunction with LBCC coursework. The JATC or TATC committee outlines the training courses needed to prepare students to become qualified journey-persons.

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

If interested in an Oregon State Apprenticeship program, please contact the Oregon State Bureau of Labor and Industries Apprenticeship Training Division at 971-245-3844, ATD.Email@boli.oregon.gov, or www.oregon.gov/boli/apprenticeship for program and entrance requirements.

Program Requirements

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

The degree and certificates available in these trades are designed for journey-persons who have completed an Oregon registered apprenticeship program with transcripted related training. The degree and/or certificates are available for journey-persons who have completed a 2-, 3- or 4-year apprenticeship program. Up to 22 credits may be granted for a journey card from the State of Oregon as credit for prior certification.

Facilities

The LBCC Apprenticeship program is offered in modern, well-equipped classrooms and laboratories. Apprenticeship technology labs are equipped with electrical components, meters, and programmable logic controller stations for electricians and instrument technicians to gain hands-on experience. The industrial mechanics lab facilities include equipment for practice in welding training, machinery alignment, and material sciences.

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Electrician Apprenticeship Technologies, Associate of Applied Science degree requirements will be able to:

- Complete 4,000–8,000 hours of State of Oregon approved OJT attaining a journey card.
- Apply theory of electrical wiring.
- Repair and install electrical wire devices according to licensure regulations to meet National Electrical Code (NEC) and Oregon Specific Codes (OSC) for Limited Energy Technician – License A and Manufacturing Plant Electrician.

A journey card and state-issued Certificate of Completion of the Electrician Apprenticeship training is required. The journey card may replace up to 22 credits of the program requirements.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) degree.

Communication

	Communication Course	3

See the Related Instruction Requirements section for a list of approved courses.

Computation

The 3 credit Computation related instruction requirement is embedded in courses below. All other credits apply toward program requirements.

APR 101	Intro Electricity/Circuit Comp	6
	and	
APR 102	AC Components and Uses	6
	and	
APR 103	Elec Generator/Motors/Control	6
	or	
APR 257	Math for Apprenticeship	5
	or	
MTH 075	Variables and Linear Equations or higher	4

Human Relations

APR 110	Essential Workplace Skills for Success	3
	or	
	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Program Courses

Select from the following courses for a program total of 90 credits:

	Credit for Prior Certification	22
APR 101	Intro Electricity/Circuit Comp	6
APR 102	AC Components and Uses	6
APR 103	Elec Generator/Motors/Control	6
APR 121	Intro to Limited Energy Trade	4
APR 122	Fund of Electricity & Electron	4
APR 123	Electrical Test Equipment	4
APR 201	Electric Motors	6
APR 202	Electric Motor Controls	6
APR 208	National Electrical Code I	6
APR 210	National Electrical Code II	6
APR 212	National Electrical Code III	6
APR 214	Programmable Logic Controllers	3
APR 215	Advanced PLC Troubleshooting	3
APR 216	Industrial Pneumatic Systems	3
APR 217	Process Control & Instrumentation	3
APR 221	Specialized Systems	4
APR 222	Process Cont & Instrumentation	4
APR 223	Comm Systems & Networks	4

APR 224	Protective Signaling	4
APR 225	Systems Integration	4
APR 261	Natl Electrical Code: Expanded Exam Prep	3
APR 263	Industrial Sensors & Actuators	3

In addition, any MT3. course may be taken.

Total Credit Hours: 90

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES, ONE-YEAR CERTIFICATE

Students who successfully complete all Electrician Apprenticeship Technologies, One-year Certificate program requirements will be able to:

- Complete 4,000-8,000 hours of State of Oregon approved OJT attaining a journey card.
- Apply theory of electrical wiring.
- Repair and install electrical wire devices according to licensure regulations to meet National Electrical Code (NEC) and Oregon Specific Codes (OSC) for Limited Energy Technician - License A and Manufacturing Plant Electrician.

A journey card and state-issued Certificate of Completion of the Electrician Apprenticeship (Limited Maintenance Electrician and Limited Energy Technician A or B) training is required. The journey card may replace up to 11 credits of the program requirements.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs.*

Communication (3 credits)

	Communication Course	3

See the Related Instruction Requirements section for a list of approved courses.

Computation

The 3 credit Computation related instruction requirement is embedded in courses below. All other credits apply toward program requirements.

APR 101	Intro Electricity/Circuit Comp	6
	and	
APR 102	AC Components and Uses	6
	and	
APR 103	Elec Generator/Motors/Control	6
	or	
APR 257	Math for Apprenticeship	5
	or	
MTH 075	Variables and Linear Equations or higher	4

Human Relations (3 credits)

APR 110	Essential Workplace Skills for Success	3
	or	
	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Program Courses

Select from the following courses for a program total of 45 credits:

	Credit for Prior Certification	11
APR 101	Intro Electricity/Circuit Comp	6
APR 102	AC Components and Uses	6
APR 103	Elec Generator/Motors/Control	6
APR 121	Intro to Limited Energy Trade	4
APR 122	Fund of Electricity & Electron	4
APR 123	Electrical Test Equipment	4
APR 201	Electric Motors	6
APR 202	Electric Motor Controls	6
APR 208	National Electrical Code I	6
APR 210	National Electrical Code II	6
APR 212	National Electrical Code III	6
APR 214	Programmable Logic Controllers	3
APR 215	Advanced PLC Troubleshooting	3
APR 216	Industrial Pneumatic Systems	3
APR 217	Process Control & Instrumentation	3
APR 221	Specialized Systems	4
APR 222	Process Cont & Instrumentation	4
APR 223	Comm Systems & Networks	4
APR 224	Protective Signaling	4
APR 225	Systems Integration	4
APR 261	Natl Electrical Code: Expanded Exam Prep	3
APR 263	Industrial Sensors & Actuators	3

In addition, any MT3. course may be taken.

Total Credit Hours: 45

LIMITED ELECTRICIAN APPRENTICESHIP TECHNOLOGIES CERTIFICATE

Students who successfully complete all Limited Electrician Apprenticeship, Certificate program requirements will be able to:

- Complete 4,000 hours of State of Oregon approved OJT.
- Repair and install electrical wire devices according to limited licensure and regulations to meet NEC and OSC code for Limited Energy Technician – License B and Limited Maintenance Electrician.

A journey card and state-issued Certificate of Completion of the Limited Electrician Apprenticeship training is required.

PROGRAM COURSE REQUIREMENTS

Program Courses

Select from the following courses for a program total of 24 credits:

APR 101	Intro Electricity/Circuit Comp	6
APR 102	AC Components and Uses	6
APR 103	Elec Generator/Motors/Control	6
APR 121	Intro to Limited Energy Trade	4
APR 122	Fund of Electricity & Electron	4
APR 123	Electrical Test Equipment	4
APR 201	Electric Motors	6
APR 202	Electric Motor Controls	6
APR 208	National Electrical Code I	6
APR 210	National Electrical Code II	6
APR 212	National Electrical Code III	6
APR 214	Programmable Logic Controllers	3
APR 221	Specialized Systems	4
APR 222	Process Cont & Instrumentation	4
APR 223	Comm Systems & Networks	4
APR 224	Protective Signaling	4
APR 225	Systems Integration	4
APR 261	Natl Electrical Code: Expanded Exam Prep	3
APR 263	Industrial Sensors & Actuators	3

Total Credit Hours: 24

INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Industrial Mechanics & Maintenance Technology Apprenticeship, Associate of Applied Science degree requirements will be able to:

- Complete 4,000 - 8,000 hours of State of Oregon approved OJT attaining a journey card.
- Repair, install, and maintain a variety of industrial equipment using trade specific tools and techniques in compliance with state regulations for Millwright, Pipefitter, Welder, Lubrication Technician, Machinist, and Instrumentation Technician.

A journey card and state-issued Certificate of Completion of the Industrial Mechanics and Maintenance Apprenticeship training (Millwright, Pipefitter, Welder, Lubrication Technician, Machinist, and Instrumentation Technician) is required. The journey card may replace up to 22 credits of the program requirements.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) degree.

Communication

	Communication Course	3

See the Related Instruction Requirements section for a list of approved courses.

Computation

APR 257	Math for Apprenticeship	5
	or	
MTH 075	Variables and Linear Equations	4

Human Relations

APR 110	Essential Workplace Skills for Success	3
	or	
	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Program Courses

Select from the following courses for a program total of 90 credits:

	Credit for Prior Certification	22
APR 151	Welding I	2
APR 152	Welding II	2
APR 160	Prep for Certification	1 to 2
APR 161	Manufacturing Processes I	2
APR 214	Programmable Logic Controllers	3
APR 215	Advanced PLC Troubleshooting	3
APR 216	Industrial Pneumatic Systems	3
APR 217	Process Control & Instrumentation	3
APR 251	Safe Rigging Practices	3
APR 252	Industrial Hydraulics I	3
APR 255	Introduction to Metallurgy	3
APR 256	Electricity for Maintenance	4
APR 258	Machinery Alignment	3
APR 262	Pumps & Valves	2
APR 264	Manufacturing Processes II	2
APR 265	Manufacturing Processes III	2
APR 268	Basic Print Reading: Welders	3
APR 270	Automated Material Handling	3
APR 274	Drive Systems	2
APR 275	Mechanical Systems	4
APR 276	Bearings & Lube Systems	2
APR 277	Industrial Safety	2

In addition, any EG4., PFW, MA3., MT3., or WLD course may be taken.

Total Credit Hours: 90

INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP, ONE-YEAR CERTIFICATE

Students who successfully complete all Industrial Mechanics and Maintenance, One-year Certificate program requirements will be able to:

- Complete 4,000 - 8,000 hours of State of Oregon approved OJT attaining a journey card.
- Repair, install, and maintain a variety of industrial equipment using trade specific tools and techniques in compliance with state regulations for Millwright, Pipefitter, Welder, Lubrication Technician, Machinist or Instrumentation Technician.

A journey card and state-issued Certificate of Completion of the Millwright, Pipefitter, Welder, Lubrication Technician, Machinist, or Instrumentation Technician training is required. The journey card may replace up to 11 credits of the program requirements.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) programs.

Communication

	Communication Course	3

See the Related Instruction Requirements section for a list of approved courses.

Computation

APR 257	Math for Apprenticeship	5
	or	
MTH 075	Variables and Linear Equations	4

Human Relations

APR 110	Essential Workplace Skills for Success	3
	or	
	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Program Courses

Select from the following courses for a program total of 45 credits:

	Credit for Prior Certification	11
APR 151	Welding I	2
APR 152	Welding II	2
APR 160	Prep for Certification	1 to 2
APR 214	Programmable Logic Controllers	3
APR 215	Advanced PLC Troubleshooting	3
APR 216	Industrial Pneumatic Systems	3
APR 217	Process Control & Instrumentation	3
APR 252	Industrial Hydraulics I	3
APR 258	Machinery Alignment	3
APR 262	Pumps & Valves	2
APR 264	Manufacturing Processes II	2
APR 265	Manufacturing Processes III	2
APR 268	Basic Print Reading: Welders	3
APR 270	Automated Material Handling	3
APR 274	Drive Systems	2
APR 275	Mechanical Systems	4
APR 276	Bearings & Lube Systems	2
APR 277	Industrial Safety	2

In addition, any EG4., PFW, MA3., MT3., or WLD course may be taken.

Total Credit Hours: 45

Automotive Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/automotive-technology.php

The Automotive Department offers a two-year National Institute for Automotive Service Excellence (ASE) accredited Associate of Applied Science degree (p. 67) and a one year ASE accredited Automotive Maintenance and Light Repair certificate (p. 67). The program emphasizes training in service, diagnosis, and the repair of modern vehicles using the latest diagnostic and under-car equipment. In cooperation with Stellantis Auto Group, Mercedes Benz, General Motors, Ford, Subaru, Toyota, the National Coalition of Certification Centers (NC3), Snap-on Corporation, and ASE Education Foundation, the program combines operational theory with hands-on activities. Areas of focus are engine repair, automatic transmissions, manual transmission and drivetrain, suspension, steering and brakes, electrical and electronic systems, heating and air conditioning, and engine performance. The program prepares students for ASE certification tests and jumpstarts a career in the automotive service industry.

Program Requirements

A meeting with a program faculty advisor is required prior to registering for first year classes. Refer to the department website for additional policies and details.

Additional program costs are approximately:

- $1,450.00 tool fee per term in the first 3 terms.
- $100 - $200 per term for textbooks.
- $10 lab fee per credit for each Automotive course.

Facilities

The Automotive Technology program is located at the Advanced Transportation Technology Center (ATTC) on 2000 West Oak Street in Lebanon, Oregon. The training facilities include 38,000 square feet of professional learning and repair space, furnished Snap-on Tools for student use, a Mustang AC/EC Hybrid Dynamometer, and over 20 state-of-the-art Snap-on Diagnostic Tools including bi-directional scan tools, 4 channel lab scopes, and factory level diagnostic equipment.

AUTOMOTIVE TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Automotive Technology, Associate of Applied Science degree requirements will be able to:

- Practice safety precautions to protect oneself, vehicles, and the environment.
- Communicate clearly with team members and customers.
- Conduct oneself on the job with a high degree of professionalism.
- Use service literature and tools efficiently.
- Practice a systematic diagnostic and repair strategy to maintain modern automobiles and light trucks.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56)*. For information on the advised sequence of program courses, see the Automotive Technology, Associate of Applied Science Program Map.*

Computation

AUT 290	Math & Measurement for Transportation Technicians	4
	or	
MTH 075	Variables and Linear Equations	4

AUT 290 and MTH 075: 3 credits apply towards computation requirements; one credit applies toward program.

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 121Z	Composition I	4

WR 121Z: 3 credits apply towards communication requirements; one credit applies toward program.

Human Relations

AUT 643	Customer Service for Auto Tech	3
	or	
	Human Relations	3

See Related Instruction Requirements for approved courses that satisfy the Human Relations requirement.

Program Courses

AUT 295	Manual Drivetrain & Axles	5
AUT 296	Advanced Steering, Suspension, Brakes and Advanced Drivers Assist Systems (ADAS)	6
AUT 298	Advanced Engine Performance	6
AUT 299	Engine Repair	5
AUT 300	Automatic Transmissions & Transaxles	6
AUT 303	Auto Heating/Air Conditioning	5
AUT 315	Vehicle Systems Diagnostics: Scanner and Scope	3
AUT 316	Maintenance & Light Repair	10
AUT 317	Electrical Sys & Engine Performance	10
AUT 319	Suspension, Steering & Braking	10
AUT 350	Shop Skills I	3
AUT 351	Shop Skills II	3
	Approved Electives	9

Approved Electives

AUT 301	Automotive Service and Repair Practice	1-2
MA3. 396B	Manufacturing Processes I	2
WLD 170	Welding I	2
WLD 171	Welding II	2
WE1. 280W	CWE Auto Technology	1-12

Students with prior Automotive certification may be elegible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 91-92

AUTOMOTIVE MAINTENANCE & LIGHT REPAIR (MLR), ONE YEAR CERTIFICATE

Students in this program will learn the Maintenance and Light Repair (MLR) of modern vehicles as outlined by the ASE Education Foundation. In cooperation with Stellantis Auto Group, General Motors, Ford, Mercedes Benz, Subaru, Toyota, the National Coalition of Certification Center (NC3), Snap-on Corporation and ASE Education Foundation, students will use high quality equipment and tooling to perform vehicle services and repair tasks. After one year of study, students are qualified for employment as an entry level automotive technician.

Students who successfully complete all Automotive Maintenance & Light Repair (MLR), One-year Certificate requirements will be able to:

- Practice safety precautions to protect yourself, vehicles, and the environment.

- Communicate clearly with team members and customers.
- Conduct yourself on the job with a high degree of professionalism.
- Use service literature and tools efficiently.
- Inspect, service, and perform basic repairs of modern automobiles and light trucks.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Automotive Maintenance & Light Repair, One-year Certificate Program Map.*

Computation

AUT 290	Math & Measurement for Transportation Technicians	4
	or	
MTH 075	Variables and Linear Equations	4

AU3. 290 and MTH 075: 3 credits apply towards computation requirements; one credit applies toward program.

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 121Z	Composition I	4

WR 121Z: 3 credits apply towards communication requirements; one credit applies toward program.

Human Relations

AUT 643	Customer Service for Auto Tech	3
	or	
	Human Relations	3

Program Courses

AUT 315	Vehicle Systems Diagnostics: Scanner and Scope	3
AUT 316	Maintenance & Light Repair	10
AUT 317	Electrical Sys & Engine Performance	10
AUT 319	Suspension, Steering & Braking	10
AUT 350	Shop Skills I	3
AUT 351	Shop Skills II	3

Students with prior Automotive certification may be elegible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 49-50

ELECTRIC VEHICLE/HYBRID VEHICLE TECHNICIAN, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Electric Vehicle/Hybrid Vehicle Technician, Associate of Applied Science degree requirements will be able to:

- Inspect, service, and perform basic repairs of modern automobiles and light trucks.
- Practice safety precautions to protect yourself, vehicles, and the environment.
- Properly articulate, through verbal and written communication, what constitutes each of the different vehicle electrification categories.
- Identify and describe each of the HEV system sub-category derivative types and associated operational modes, including all sub-systems.
- Visually identify and confirm if the equipment being utilized to perform electrical measurements meets the minimum CAT safety requirements.
- Perform High Voltage Battery Pack testing when installed in the vehicle or removed from the vehicle and bench tested by using specialized testing equipment.
- Test and check the functionality of cabin and High Voltage battery pack HVAC system and its associated components utilizing test vehicles, diagrams, OEM service information, Scan Tools, electronic test equipment, and worksheets.
- Articulate how the mechanical, hydraulic, electrical, and electronic systems operate to permit and control the Regen Braking System, and how to test, analyze, and service the Regen Braking System when provided with test equipment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Electric Vehicle/Hybrid Vehicle, Associate of Applied Science Program Map.*

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 121Z	Composition I	4

Computation

AUT 290	Math & Measurement for Transportation Technicians	4
	or	

MTH 075	Variables and Linear Equations or higher	4

Human Relations

AUT 643	Customer Service for Auto Tech	3
	or	
	Human Relations	3

See Related Instruction Requirements (p. 57) for approved courses that satisfy the Human Relations requirement.

Program Courses

AUT 315	Vehicle Systems Diagnostics: Scanner and Scope	3
AUT 316	Maintenance & Light Repair	10
AUT 317	Electrical Sys & Engine Performance	10
AUT 319	Suspension, Steering & Braking	10
AUT 350	Shop Skills I	3
AUT 351	Shop Skills II	3
EV 400	EV/Hybrid System Architecture and Safety Systems	10
EV 401	EV/Hybrid AC/DC Theory and Systems Operation	10
EV 402	Electric Vehicle Propulsion Systems	10
EV 403	Advanced Vehicle Control Networking Diagnosis	3
EV 404	Hybrid/EV Power Storage Systems/Battery Technology	3
EV 405	Understanding Advanced Driver Assist Systems (ADAS)	3
WE1. 280W	CWE Auto Technology	1-12

Students must complete a minimum of **3 credits of** WE1. 280W Cooperative Work Experience (CWE).

Students with prior Automotive certification may be elegible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 91-92

ELECTRIC VEHICLE/HYBRID VEHICLE TECHNICIAN, ONE-YEAR CERTIFICATE

Students who successfully complete all Electric Vehicle/Hybrid Vehicle Technician, One-Year Certificate requirements will be able to:

- Properly articulate, through verbal and written communication, what constitutes each of the different vehicle electrification categories.
- Identify and describe each of the HEV system sub-category derivative types and associated operational modes, including all sub-systems.
- Visually identify and confirm if the equipment being utilized to perform electrical measurements meets the minimum CAT safety requirements.
- Perform High Voltage Battery Pack testing when installed in the vehicle or removed from the vehicle and bench tested by using specialized testing equipment.
- Test and check the functionality of cabin and High Voltage battery pack HVAC system and its associated components utilizing test vehicles, diagrams, OEM service information, Scan Tools, electronic test equipment, and worksheets.
- Identify and describe the components that comprise the Power Electronics cooling system, utilize a Scan Tool and identify PIDs/CPIDs to determine cooling system performance, and use specialized tools to service the system.
- Articulate how the mechanical, hydraulic, electrical, and electronic systems operate to permit and control the Regen Braking System, and how to test, analyze, and service the Regen Braking System when provided with test equipment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate programs. In addition, this program requires the successful completion of the Auto Maintenance Light Repair, One-Year Certificate (p. 67) *prior to enrollment. For information on the advised sequence of program courses, see the Electric Vehicle/Hybrid Vehicle Technician, One-year Certificate Program Map.*

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 121Z	Composition I	4

Computation

AUT 290	Math & Measurement for Transportation Technicians	4
	or	
MTH 075	Variables and Linear Equations	4

	or higher	
Human Relations		
AUT 643	Customer Service for Auto Tech	3
	or	
	Human Relations	3

See Related Instruction Requirements (p. 57) for approved courses that satisfy the Human Relations requirement.

Program Courses		
EV 400	EV/Hybrid System Architecture and Safety Systems	10
EV 401	EV/Hybrid AC/DC Theory and Systems Operation	10
EV 402	Electric Vehicle Propulsion Systems	10
EV 403	Advanced Vehicle Control Networking Diagnosis	3
EV 404	Hybrid/EV Power Storage Systems/Battery Technology	3
EV 405	Understanding Advanced Driver Assist Systems (ADAS)	3

Total Credit Hours: 49-50

Coding Reimbursement Specialist

https://www.linnbenton.edu/future-students/explore-lb/programs/coding-reimbursement-specialist.php

One of the most difficult challenges facing the healthcare industry today is reimbursement. The Coding and Reimbursement program covers the reimbursement cycle from documentation of services to claim submission. A significant element of the reimbursement cycle is called medical coding. Medical coders are a vital part of the healthcare field. Accurate and efficient coding is critical to receiving proper reimbursement for services provided. Graduates are prepared to take the industry standard examination, which allows them opportunities in coding and reimbursement across the nation and globally.

Program Requirements

A Coding and Reimbursement Specialist reads and interprets the medical records of patients in all types of healthcare facilities to obtain detailed information regarding their diseases, injuries, surgical operations and other procedures. This specialist then assigns codes using specific code sets. A person wanting to become a Coding and Reimbursement Specialist should have an interest in working with medical information and be comfortable working at a job that involves significant computer work and is detail driven.

The Coding and Reimbursement Specialist program is designed to be completed in one year. Students need to have basic math, writing and computer skills.

CODING REIMBURSEMENT SPECIALIST, ONE-YEAR CERTIFICATE

Students who successfully complete all Coding and Reimbursement Specialist, One-year Certificate requirements will be able to:

- Demonstrate competency in procedural coding from both the CPT and HCPCS II code sets.
- Demonstrate competency in diagnostic coding from the ICD10 code sets.
- Demonstrate competency in Evaluation and Management Coding from the 2021 and 2023 CMS/CPT standards.
- Demonstrate competency in coding and reimbursement compliance, including HIPAA.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Coding and Reimbursement Specialist, One-Year Certificate Program Map.*

Communication		
CRS 125	Medical Office Communication	3
Computation		
CRS 110	Medical Insurance Procedures	4
CRS 180A	Medical Office Management for Coders	3

2 credits of CRS 110 apply toward related instruction requirements, 2 credits apply toward program.

1 credit of CRS 180A applies toward related instruction requirements, 2 credits apply toward program.

Human Relations		
CRS 127	Medical Law and Ethics for Coders	3
Program Courses		
CRS 101	Coding I	5
CRS 102	Coding II	5
CRS 103	Coding III	5
CRS 126	Medical Documentation for Coders	3
CRS 131	Medical Terminology and Body Systems I for Coding and	3

	Reimbursement	
CRS 132	Medical Terminology and Body Systems II	3
CRS 133	Medical Terminology and Body Systems III	3
CRS 134	Pathology for Coders	3
CRS 180B	Medical Office Management for Coders Lab	1
CRS 211	CPC/CMA Test Taking Strategies	1

Total Credit Hours: 45

Community Health

https://www.linnbenton.edu/future-students/explore-lb/programs/public-health.php

The one-year certificate in Community Health prepares students to work in the fields of public health, health care, and community-based organizations. Jobs include community health worker, wellness coach, birth doula, peer wellness specialist, peer-centered support specialist, health navigator, and community health advocate. Graduates work to reduce unequal rates of illness and death between different communities, promote wellness, and advocate for health equity. All course work can be applied to an Associates of Arts Oregon Transfer Degree. Courses cover foundations of public health, motivational interviewing, and health promotion strategies.

COMMUNITY HEALTH, ONE-YEAR CERTIFICATE

Students who successfully complete all Community Health, One-Year Certificate requirements will be able to:

- Demonstrate knowledge of available community resources to support a person's health goals.
- Explain the importance of understanding complex practices, values, beliefs and culturally and historically defined differences within the context of community health.
- Demonstrate understanding of social determinants of health and the ability to navigate the health system.
- Explain the relationship between human behavior and health.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Community Health, One-Year Certificate Program Map.*

Communication

WR 121Z	Composition I	4

WR 121Z (p. 215): 3 credits apply toward communication requirements; one credit applies toward program.

Computation

MTH 105Z	Math in Society or higher	4

MTH 105Z (p. 181): 3 credits apply toward computation requirements; one credit applies toward program.

Human Relations

	Human Relations	3

See Related Instruction Requirements (p. 56) for approved courses that satisfy the Human Relations requirement.

Program Courses

COMM 218Z	Interpersonal Communication	4
HE 100	Introduction to Public Health	4
HE 225	Social Determinants of Health	4
HE 256	Foundations of Public Health Education and Promotion	4
HE 261	Adult CPR/AED with Pediatric	1
HE 267	Wellness Coaching Fundamentals	3
HE 282	Foundations of Community Health	6
PE 231	Lifetime Health & Fitness	3
	Electives	5-8

Students should choose from the list of approved electives below.

Approved Electives

HE 112	Emergency First Aid	1
HE 151	Drugs in Society	3
HE 207	Stress Management	3
HE 210	Intro To Health Services	3
HE 280	CWE Health	1 TO 12
HE 281	Community Birth Doula	4
NUTR 225	General Human Nutrition	3
PE 131	Intro To Health And Physical Education	3

Total Credit Hours: 45-48

Computed Tomography

The Computed Tomography (CT) program offers an online certificate through the Diagnostic Imaging department. Courses provide the professional community with a cognitive base of entry-level education in the practice of computed tomography (CT). The advanced professional practice of computed tomography requires specific knowledge and skills generally not obtained in basic

educational programs in radiography. The core content section of this certificate represents curriculum elements that are considered essential to the didactic education during the post primary practice of computed tomography. The courses are offered solely online. *Note: The Computed Tomography certificate is not eligible for Federal Financial Aid.*

Program Requirements

Students must be a current Linn-Benton Community College Diagnostic Imaging student and/or ARRT registered technologist.

COMPUTED TOMOGRAPHY CERTIFICATE

Students who successfully complete all Computed Tomography Certificate requirements will be able to:

- Demonstrate understanding of ARRT designated Computed Tomography procedures.
- Provide patient care and safety with empathy and cultural competence.
- Protect patients, self, and others by applying the principles of radiation physics and radiation safety.
- Demonstrate understanding of Computed Tomography equipment and instrumentation to industry standards.

PROGRAM COURSE REQUIREMENTS

Program Courses

CAT 230	Basic Prin Computed Tomography	1
CAT 231	Patient Care and Assessment for CT	3
CAT 232	Imaging Procedures & Sectional Anatomy for CT	4
CAT 233	Physics & Instrumentation CT	4
CAT 234	Clinical Externship CT	3

Total Credit Hours: 15

Computer Aided Drafting and Design

https://www.linnbenton.edu/future-students/explore-lb/programs/cadd.php

The Computer Aided Drafting and Design AAS program prepares individuals to apply technical skills and advanced computer software and hardware to the creation of graphic representations and simulations in support of engineering projects. Includes instruction in engineering graphics, two-dimensional and three-dimensional engineering design, solids modeling, engineering animation, rapid prototyping, 3D printing, CNC manufacturing, computer-aided drafting (CAD), computer-aided design (CADD), and AutoCAD techniques.

The CAD Mechanical/Prototyping One-Year Certificate program prepares individuals to apply technical knowledge and skills in the use of three-dimensional (3-D) computer technology to create technical illustrations and models used in manufacturing, design, production, and construction. Includes instruction in 3-D computer-aided design (CAD), 3-D printing, 3-D model design and construction, and 3-D scanning.

The CAD Architectural, Engineering, Civil One-Year Certificate program prepares individuals to apply basic engineering principles and technical skills in support of civil engineers engaged in designing and executing public works projects such as highways, dams, bridges, tunnels and other facilities. Includes instruction in site analysis, structural testing procedures, field and laboratory testing procedures, plan and specification preparation, test equipment operation and maintenance, and report preparation.

COMPUTER AIDED DRAFTING AND DESIGN, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Computer Aided Drafting and Design, Associate of Applied Science degree requirements will be able to:

- Use current Computer Aided Design technology to design, and subsequently print, two-dimensional industry standard drawings.
- Use a variety of advanced parametric Computer Aided Design software applications to design, and subsequently print, three-dimensional parts, assemblies, and sub-assemblies.
- Use American National Standards Institute & American Society of Mechanical Engineers guidelines when designing and producing drawings.
- Work as an integrated member of a drafting technology design team, collaborating on concepts and ideas related to a working project.
- Effectively use AutoCAD, and other 3D modeling software
- Visualize and interpret real world designs and concepts and translate them into drawings and 3D models
- Communicate effectively using industry standards
- Think critically to solve engineering problems

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Computer Aided Drafting and Design, Associate of Applied Science Program Map.*

Communication		
IN4. 164	Technical Writing for CTE	3
Computation		
MTH 075	Variables and Linear Equations	4
MTH 075: Three credits apply toward computation requirement; one credit applies toward program.		
Human Relations		
EG4. 471	Capstone Project	3
Program Courses		
EG4. 409	Drafting Fundamentals	3
EG4. 411	Orientation to CAD	2
EG4. 412	Introduction to Inventor	3
EG4. 414	Introduction to Fusion 360	3
EG4. 419	Fundamentals of Product Design and Development	3
EG4. 423	Architectural Design 1	4
EG4. 442	Digital Design and Fabrication Fundamentals	3
EG4. 443	Schematics	3
EG4. 445	Plane Surveying	3
EG4. 451	Solids I	3
EG4. 455	Structural Drafting	3
EG4. 456	Civil Drafting Lab	1
EG4. 458	Mechanical Design Drafting	4
EG4. 463	Architectural Design II	3
EG4. 465	Civil Drafting II	3
ENGR 242	Introduction To GIS	3
GS 104	Physical Science: Principles Of Physics	4
WE1. 280R	CWE for CADD	1-12
	Electives	26

Students need to take a minimum of **3 credits** of WE1. 280R Cooperative Work Experience (CWE).

Refer to the list below for Approved Electives.

Electives		
EG4. 452	Solids II	3
EG4. 460	AutoCAD	4
EG4. 462	Advanced Inventor	3
EG4. 464	Advanced Fusion 360	3
MA3. 396B	Manufacturing Processes I	2
MA3. 398B	Manufacturing Processes III	2
MA3. 405	Inspection I	2
WLD 170	Welding I	2
WE1. 280R	CWE for CADD	1-12

Total Credit Hours: 90

CAD ARCHITECTURAL, ENGINEERING, CIVIL, ONE-YEAR CERTIFICATE

Students who successfully complete all CAD Architectural, Engineering, Civil, One-Year Certificate degree requirements will be able to:

- Effectively use AutoCAD, and other 3D modeling software
- Visualize and interpret real world designs and concepts and translate them into drawings and 3D models
- Use Computers and Surveying equipment to generate construction documentation
- Communicate effectively using industry standards
- Thinks critically to solve engineering problems

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate programs. For information on the advised sequence of program courses, see the CAD Architectural, Engineering, Civil, One-Year Certificate Program Map.

Communication		
IN4. 164	Technical Writing for CTE	3
Computation		
MTH 075	Variables and Linear Equations	4
MTH 075: 3 credits apply toward computation requirements; one credit applies toward program.		
Human Relations		
EG4. 471	Capstone Project	3
Program Courses		
EG4. 409	Drafting Fundamentals	3
EG4. 411	Orientation to CAD	2
EG4. 423	Architectural Design 1	4
EG4. 443	Schematics	3
EG4. 445	Plane Surveying	3
EG4. 455	Structural Drafting	3
EG4. 456	Civil Drafting Lab	1
EG4. 460	AutoCAD	4
EG4. 463	Architectural Design II	3
EG4. 465	Civil Drafting II	3
ENGR 242	Introduction To GIS	3
	Electives	4

Total Credit Hours: 46

CAD MECHANICAL/PROTOTYPING, ONE-YEAR CERTIFICATE

Students who successfully complete all CAD Mechanical/Prototyping, One-Year Certificate degree requirements will be able to:

- Use current Computer Aided Design technology to design, and subsequently print, two-dimensional industry standard drawings.
- Use a variety of advanced parametric Computer Aided Design software applications to design, and subsequently print, three-dimensional parts, assemblies, and sub-assemblies.
- Use American National Standards Institute & American Society of Mechanical Engineers guidelines when designing and producing drawings.
- Work as an integrated member of a drafting technology design team, collaborating on concepts and ideas related to a working project.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-Year Certificate programs. For information on the advised sequence of program courses, see the CAD Mechanical/Prototyping, One-Year Certificate Program Map.

Communication

IN4. 164	Technical Writing for CTE	3

Computation

MTH 075	Variables and Linear Equations	4

MTH 075: 3 credits apply toward computation requirements; one credit applies toward program.

Human Relations

EG4. 471	Capstone Project	3

Program Courses

EG4. 409	Drafting Fundamentals	3
EG4. 411	Orientation to CAD	2
EG4. 412	Introduction to Inventor	3
EG4. 414	Introduction to Fusion 360	3
EG4. 419	Fundamentals of Product Design and Development	3
EG4. 442	Digital Design and Fabrication Fundamentals	3
EG4. 458	Mechanical Design Drafting	4
MA3. 427	Solidworks I	3
	Electives	11

Refer to the list below for Approved Electives.

Electives

EG4. 452	Solids II	3
EG4. 460	AutoCAD	4
EG4. 462	Advanced Inventor	3
EG4. 464	Advanced Fusion 360	3
MA3. 396B	Manufacturing Processes I	2
MA3. 398B	Manufacturing Processes III	2
MA3. 405	Inspection I	2
WLD 170	Welding I	2
WE1. 280R	CWE for CADD	1-12

Total Credit Hours: 45

Construction and Forestry Equipment Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/heavy-equipment-diesel-technology.php

The Construction and Forestry Equipment Technology program trains John Deere sponsored students to diagnose, troubleshoot, service, and rebuild heavy equipment and diesel engines. This career field is experiencing rapid growth and technicians are in high demand. The placement rate for graduates of this program is high.

Students pay additional fees for a set of Snap-On brand tools, basic tool bag, and student uniform. Contact the program advisors for specific details.

Refer to sponsoring companies' websites for information specific on the John Deere Construction and Forestry student sponsorship program:

- https://construction.papemachinery.com/careers
- https://www.coastlineequipment.com/technician-program**Program Requirements**

Students must meet or exceed the scores needed for placement into the following courses to begin the Construction and Forestry Equipment Technology program:

1. WR 115
2. MTH 075

Facilities

The Construction and Forestry Equipment Technology program campus is located at the world class Advanced Transportation Technology Center, 2000 West Oak Street, Lebanon, Oregon, 97355. The training facilities include well-equipped classrooms, laboratories, and shops. The Heavy Equipment/Diesel shop facility houses two 6-ton overhead bridge cranes and a Chassis Dynamometer with data acquisition capabilities.

CONSTRUCTION AND FORESTRY EQUIPMENT TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Construction and Forestry Equipment Technology, Associate of Applied Science degree requirements will be able to:

- Understand superior customer service at a John Deere dealership.
- Use John Deere electronic service tools and software programs effectively.
- Demonstrate appropriate use and care of shop and personal tools.
- Apply fundamental industry skills and concepts to unfamiliar situations.
- Follow safe shop practices.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Construction and Forestry Equipment Technology, Associate of Applied Science Program Map.*

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing or higher	3

Computation

MTH 075	Variables and Linear Equations	4
	or	
AUT 290	Math & Measurement for Transportation Technicians	4

MTH 075 or higher will fulfill program requirements.

Human Relations

CST 226	Customer Service For Heavy Equipment Technicians	3

Program Courses

HE 110	First Aid and CPR	1
CST 112	Employability Skills	3
CST 114	Fundamental Shop Skills	3
CST 116	Electrical & Electronic Systems	10
CST 126	Steering, Suspension, and Brakes	10
CST 136	Powertrain Systems	10
CST 214	Mobile Hydraulics	10
CST 224	Heavy Equipment/Diesel Engines	10
CST 234	Diesel Engine Performance, Efficiency, and Ecology	10
CST 236	Mobile Air Conditioning & Comfort Systems	3
MA3. 396B	Manufacturing Processes I	2
WE1. 280D	CWE Construction & Forestry Equipment Technology	6
WLD 170	Welding I	2
WLD 171	Welding II	2

Refer to the list below for approved electives.

Approved Electives

Program faculty may approve elective courses to be taken in addition to above requirements.

CST 122	Service and Repair	3

Any WLD or MA3. course may be taken to fulfill the elective requirement.

Other elective courses may be approved by Construction and Forestry Equipment program faculty advisors.

Total Credit Hours: 92

Culinary Arts

https://www.linnbenton.edu/future-students/explore-lb/programs/culinary-arts.php

Culinary Arts is an extensive Career Technical Education (CTE) pathway designed specifically for students who are serious about becoming professional chefs, bakers, and hospitality experts. The food service industry is fast-paced, creative, and always evolving, and our program will provide you with industry-relevant training, hands-on experience, and the technical skills needed to succeed in professional kitchens.

The Culinary Arts, Associate of Applied Science degree at LBCC is a comprehensive two-year program rooted in classical French, European, international, and modern cuisine. Students gain hands-on experience in a state-of-the-art kitchen, mastering food preparation, baking, and restaurant operations. The program prepares graduates for careers in Haute cuisine, Food Truck operations, entrepreneurship, and the broader hospitality industry.

Training takes place in a fully equipped kitchen that supports the Santiam Café service, Santiam Street Food (Food Truck), and catering functions. Located on the second floor of the Calapooia Center building, the Santiam Café & Bistro is run by second-year students, offering a café-style service designed to provide real-world food service training. The menu blends instructor-designed dishes focusing on essential cooking techniques with student-created specials, including coffee, tea, pastries, desserts, à la carte menu items, hearth oven baking, bread, soup, salads, and "grab & go" options.

Students work with a variety of ingredients, including meats, fich, and poultry, as part of their training. Those

with medical, religious, or personal concerns about handling or tasting these products should consult a Culinary Arts faculty advisor before registering.

Program Requirements

Students must have basic math and reading skills, work well under pressure, and demonstrate dexterity, physical stamina, concentration, and a good memory. Cooperation and teamwork are essential. A valid Oregon Liquor Control Commission (OLCC) server permit and food handler card are required. For exceptions, contact the Culinary Arts department.

The Culinary Arts program requires a strong commitment of time, effort, and financial investment. Students must purchase professional-grade tools, uniforms, and supplies essential for hands-on learning in a real-work kitchen environment. This program is designed for those pursuing a career in culinary arts, not for hobbyists looking to improve home cooking skills.

Attendance is strictly enforced, as hands-on experience is crucial to success. Students are expected to attend all class sessions, and any questions about attendance are discussed with a Culinary Arts faculty advisor before registration. All courses must be taken in sequence, meeting prerequisite requirements. A grade of C or better is required in CA 101, CA 102, CA 103, CA8. 321, CA8. 322, and CA8. 323. Students transferring to Oregon State University must earn a C or better in all practicum courses for successful transfer.

In addition to standard college expenses, students will spend approximately $2000 on course fees, uniforms, knives, shoes, books, and other required equipment. Purchases should be made after you have started the program and received guidance from your instructor.

CULINARY ARTS, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Culinary Arts, Associate of Applied Science degree requirements will be able to:

- Reflect a work ethic equal to the high standards of the culinary profession.
- Manage their individual career prospects.
- Use technical and creative skills to accomplish culinary tasks.
- Understand and utilize necessary basic and advanced culinary theory.
- Communicate effectively in business and personal situations using oral and written skills as appropriate.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Culinary Arts, Associate of Applied Science Program Map.*

Communication

	Communication	3

Computation

CA8. 302	Applied Math for Culinary Arts	3

Human Relations

	Human Relations	3

See Related Instruction Requirements (p. 57) for approved courses that satisfy the Human Relations requirement.

Program Courses

CA 101	Intro to Culinary Arts	7
CA 102	Patisserie & Baking	8
CA 103	Menu Development & Tournant Cooking	8
CA 111	Foodservice Safety and Sanitation	1
CA 112	Stations, Tools, and Culinary Techniques	3
CA8. 301	Culinary Arts Career Planning	1
CA8. 309	Purchasing for Chefs	2
CA8. 321	Restaurant & Food Truck Management I	7
CA8. 322	Restaurant & Food Truck Management II	7
CA8. 323	Restaurant & Food Truck Management III	7
CA8. 341	Soups and Sauces	3
CA8. 350	Banquets & Buffets A	1
CA8. 351	Banquets & Buffets B	2
CA8. 353	Banquets & Buffets D Taken three times	3
CA8. 368	Creating the Menu	2
CA8. 409	Meats	3

Required Electives: 10 Credits

Select 10 credits from the following list of approved electives.

BA 101Z	Introduction to Business	4
BA 169Z	Data Analysis Using Microsoft Excel	4
BA 206	Principles of Management	3
BA 215	Survey of Accounting	4
BA 223	Principles of Marketing	4
BA 224	Human Resource Management	3
BA 260	Entrepreneurship & Sm Business	4
BA 285	Organizational Behavior	4
CA8. 349	Cooking with Wine (Sauces)	3
CA8. 354	Banquets & Buffets E	1

CA8. 385	Advanced Breads	3
CA8. 421	World Cuisine	3
CA 280	CWE CULINARY ARTS	1 TO 12

Students are advised to speak with a faculty advisor about approved elective coursework.

Students are strongly encouraged to take CA8. 354 Banquets & Buffets Lab E during Fall Term.

Total Credit Hours: 90

Dental Assistant

https://www.linnbenton.edu/future-students/explore-lb/programs/dental-assistant.php

The Dental Assistant certificate program is designed to offer technical training to students who want to work in dental offices or clinics. The program prepares its graduates for employment in dentistry by emphasizing current concepts in clinical dental assisting, developing proper work ethics, particularly in regard to accuracy, safety, conduct on the job, and recognizing the value of continuing education. One class of limited size is accepted fall term.

The program is designed to allow students to take the Infection Control Examination administered by DANB at the end of the fall term, when the Infection Control class requirements have been completed successfully.

The Dental Assistant program is accredited by the American Dental Association's Commission on Dental Accreditation and by the United States Department of Education. Graduating students are eligible to take the Dental Assisting National Board Examination, and the Radiation Health and Safety, and General Chairside Examination. Successful graduates receive a Dental Assisting Certificate and are eligible to apply for the Oregon Expanded Function and Radiological Proficiency Certificates.

Facilities

Clinical and expanded function experience is gained utilizing individual stations with anatomical mannequins. Three fully equipped radiology rooms, darkroom processing, and digital radiography equipment are available for the student to acquire competence in exposing and developing radiographs. Practical experience is gained during the summer term when the student is placed in general practice and specialty offices in Linn and Benton counties.

Program Requirements

All courses must be completed with a grade of C or better. All courses must be completed with a grade of C or better and taken in the specified sequence. Students unable to meet the required competency level may be advised of other alternatives. Students accepted into the program must provide proof of initiation of the hepatitis B vaccination series, MMR vaccination, and a negative tuberculin test.

Admission Requirements

LBCC's heathcare-related programs have limited enrollment and special application deadlines. Interested students should review the Dental Assistant application guide on the Dental Assistant webpage for detailed application and admissions information. Applications are accepted on a first-come, first-served basis with preference given to residents of the Linn-Benton Community College service district.

Prior to the start of classes, applicants are required to:

- Complete WR 115 Intro to College Writing or equivalent course with a grade of C or better (or test into WR 121Z (p. 215) on College Placement Test).
- Complete MTH 075 Variables and Linear Equations or equivalent course with a grade of C or better (or test into MTH 075 on College Placement Test).
- Be in good academic and financial standing at LBCC in order to be admitted to this program.
- Submit a completed LBCC online admissions application form.
- Submit supplemental application materials located in Application Guide.

DENTAL ASSISTANT, ONE-YEAR CERTIFICATE

Students who successfully complete all Dental Assistant, One-year Certificate program requirements will be able to:

- Perform basic and expanded functions chairside.
- Manipulate dental materials to support chairside and lab procedures.
- Demonstrate proficiency in exposing, processing and mounting dental radiographs.
- Practice professional behaviors as it applies in a workplace environment.
- Practice asepsis, infection, and hazard controls consistent with regulations while promoting a safe work environment.

- Apply for appropriate credentials/licenses to practice dental assisting.
- Exhibit professional and work ethic by employing ethical and legal standards in dentistry.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Dental Assistant, One-year Certificate Program Map.*

Communication		
COMM 111Z	Public Speaking	4
	or	
COMM 218Z	Interpersonal Communication	4
Computation		
MTH 075	Variables and Linear Equations	4
Human Relations		
DA5. 550	Human Relations In Dentistry	3
Program Courses		
DA5. 453	Dental Pathology/Pharmacology	2
DA5. 461	Dental Radiology I	3
DA5. 462	Dental Radiology II	3
DA5. 463	Dental Radiology III	3
DA5. 484	Dental Materials I	3
DA5. 485	Dental Materials II	3
DA5. 488	Expanded Duties I	3
DA5. 489	Expanded Duties II	2
DA5. 491	Dental Office Records	2
DA5. 492	Dental Office Emergencies	2
DA5. 494	Introduction to Dentistry	3
DA5. 495	Clinical Practice	3
DA5. 496	Dental Specialties	3
DA5. 497	Dental Health Education And Nutrition	2
DA5. 500	Dental Anatomy & Histology	2
DA5. 501	Infection Control/Sterilization	2
DA5. 502	Basic Science For Dentistry	2
DA5. 510	Office Practicum	9
DA5. 515	Office Practicum Seminar	2

Total Credit Hours: 65

Dental Hygiene

PRE-PROFESSIONAL DENTAL HYGIENE PREPARATION

Linn-Benton Community College offers pre-professional preparation for transfer to dental hygiene programs. Interested students should consult with an advisor for current requirements or check the Oregon Dental Hygienists' Association Web site at www.odha.org. All hygiene programs in Oregon are listed, along with contact information and requirements for entry. Dental hygiene programs in the state of Oregon are: Lane Community College in Eugene, Mt. Hood Community College in Gresham, ODS College of Dental Science in La Grande, Oregon Institute of Technology (OIT) in Klamath Falls and Salem, Pacific University in Forest Grove, Portland Community College in Portland, and Apollo School of Dental Hygiene in Portland.

PROGRAM COURSE REQUIREMENTS

Program Courses		
BI 231	Human Anatomy & Physiology	5
BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
BI 234	Microbiology	4
CH 121	College Chemistry I	5
CH 122	College Chemistry II	5
CH 123	College Chemistry III	5
NFM 225	Nutrition	4
	or	
NUTR 225	General Human Nutrition	3
PSY 201Z	Introduction to Psychology I	4
	or	
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
MTH 095	Intermediate Algebra	4
WR 121Z	Composition I	4
WR 122Z	Composition II	4

Diagnostic Imaging

https://www.linnbenton.edu/future-students/explore-lb/programs/diagnostic-imaging.php

The Diagnostic Imaging program is a 22-month intensive associate of applied science program. The program prepares students through a progressive, outcomes-based education format and is designed to prepare students to practice as proficient, multi-skilled professionals in culturally diverse healthcare settings. Additionally, the program is designed to train students to demonstrate outcomes established by the American Society of Radiologic Technologists (ASRT), and to successfully complete the American Registry of Radiologic Technologists (ARRT) certification examination.

The Diagnostic Imaging program is accredited by the American Registry of Radiologic Technologists (ARRT).

Students move through the Diagnostic Imaging program as a cohort. Classes are tailored specifically to these students, who attend class for approximately 40 hours per week. The program does not follow the traditional college terms.

Program Requirements

LBCC's heathcare-related programs have limited enrollment and special application deadlines. Students should review the Diagnostic Imaging application guide on the Diagnostic Imaging webpage for detailed application and admissions information. Admission consideration is based on a point system and not a first-come, first-served basis.

All AAS related instruction requirements must be completed prior to admission to the program. Students are required to have a current American Heart Association (AHA) BLS Health Care Provider CPR card, updated vaccinations, and complete a criminal background check and drug screen.

Students must deposit a portion of the cost of the program prior to beginning classes. The cost of this program is subject to change.

DIAGNOSTIC IMAGING, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Diagnostic Imaging, Associate of Applied Science degree requirements will be able to:

- Demonstrate competency in ARRT designated Radiological Procedures.
- Operate equipment, store, handle and/or process any imaging information to industry standards.
- Provide patient care and comfort with empathy and cultural competence.
- Abide by the ethics and the professional conduct of medical professionals identified by the ASRT standards of ethics.
- Position patients accurately and provide quality images.
- Protect patients, self, and others by applying the principles of radiation physics.
- Demonstrate effective communication with patients, family members, and colleagues using verbal, written, and information technology tools/devices.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Diagnostic Imaging, Associate of Applied Science Program Map.*

Pre-Application Courses

The Diagnostic Imaging application guide can be found on the Diagnostic Imaging webpage and includes detailed application and admissions information. All pre-application courses must be completed with a grade of C or higher prior to admission to the program.

BI 231	Human Anatomy & Physiology	5
MTH 111Z	Precalculus I: Functions	4
WR 121Z	Composition I	4
	Communication	3
	Human Relations	3

MTH 111Z (p. 181) or higher: Satisfies the AAS related instruction Computation requirement.

Communication: Select any course with the prefix of COMM (100 level of higher) to satisfy the AAS related instruction Communication requirement.

Human Relations: Select any course from the list of approved Human Relations courses to satisfy the AAS related instruction Human Relations requirement.

Program Courses

DI 100	Comprehensive Patient Care	3
DI 110	Radiographic Proc-Chest/Abd	3
DI 111	Rad Proc-Extremities & Spine	6
DI 112	Radiographic Proc: Skull & Review	5
DI 113	Radiographic Proc: Fluoroscopy	5
DI 120	Exposure I - Production	3
DI 121	Exposure II	3
DI 122	Exposure III: Digital Imaging	2
DI 130	Pharmacology for Imaging	2
DI 140	Radiation Protection	3
DI 141	Radiation Biology	3
DI 200	Radiographic Comp Review I	1
DI 201	Radiographic Comp Review II	1
DI 210	Clinical Externship I	11
DI 211	Clinical Externship II	11
DI 212	Clinical Externship III	11
DI 213	Clinical Externship IV	11
DI 220	Radiographic Pathology	1
DI 230	Basic Prin Computed Tomography	1
	or	
DI 231	Interventional Lab Fundamentals	1

Total Credit Hours: 105

Early Childhood Education

https://www.linnbenton.edu/future-students/explore-lb/programs/early-childhood-education.php

The Early Childhood Education Program offers a two-year Associate of Applied Science degree (AAS) and an Early Childhood Education, One-Year Certificate, with a focus on family and culture, preparing students for employment in

the field of early childhood education. Additionally, an Entrepreneurship and Small Business Pathways Certificate, a 16-credit Childhood Care and Education Pathways Certificate, a 12-credit Working with Families Pathways Certificate, and a 12- or 13-credit Child Care Directors Pathways Certificate are also offered.

The program emphasizes concepts in growth and development, curriculum design, healthy relationships, positive guidance, developmentally appropriate practice, and cultural sensitivity. The program provides opportunities to apply knowledge and skills with children birth to five years of age in the program's on-campus lab school or a community-based early education setting. Students must have current inoculations before working directly with children. Second Year AAS degree students need to complete the Central Registry background check to be eligible for the student teaching experience.

If you are interested in related areas of study, see the following sections of this catalog: child care — see child care provider training; elementary school teaching — see Education (p. 23); Human Development and Family Sciences programs — see Human Services (p. 31); parent education — see Parenting Education (p. 253).

Graduates with two-year degrees become preschool or infant toddler teachers in child care centers, family child care homes, Head Start programs, or parent cooperatives. They are also eligible to become family advocates. Students plan and implement developmentally appropriate learning experiences to foster young children's physical, social-emotional, cognitive, and language development. They design and implement developmentally appropriate learning experiences, learn and practice evidence-based teaching strategies and assess children's development.

Some financial assistance is available for Early Childhood Education majors. Contact the Program Chair for more information.

If interested in pursuing a Bachelor's degree in this field, contact an advisor.

The AAS degree in Early Childhood Education is designed to be completed in two years, but this assumes that entering students are prepared to take college-level writing and math. Research has shown that students who get started on math and writing courses during their first few quarters of college are more likely to finish their degrees than those who postpone it. Linn-Benton offers a summer term that will allow you to gain these skills and stay on track to complete.

EARLY CHILDHOOD EDUCATION, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Early Childhood Education, Associate of Applied Science degree requirements will be able to:

- Plan, implement, and evaluate developmentally appropriate curriculum.
- Create developmentally appropriate learning environments, including cultural sensitivity.
- Meet the needs of children by implementing positive guidance strategies.
- Interpret child assessments, observations, and documentation to create developmentally appropriate learning experiences for children.
- Function effectively as a team member in an early education setting.
- Analyze collaborative parent partnership strategies.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) degree. For information on the advised sequence of program courses, see the Early Childhood Education, Associate of Applied Science Program Map.

Communication		
WR 121Z	Composition I	4
Computation		
MTH 105Z	Math in Society	4
Human Relations		
ANTH 110	Introduction to Cultural Anthropology	3
Program Courses		
BI 101	General Biology: Ecology and Biodiversity	4
COMM 218Z	Interpersonal Communication	4
ED 101	Observation and Guidance	4
ED 102	Education Experience	4
ED 103	Extended Education Experience	4
ED 110	Principles Of Observation	3
ED 125	Job Search Skills	1
ED 131	Positive Guidance: Young Child	3
ED 152	Creativity & the Arts	3
ED 163	Infant Toddler Development and Group Care	3
ED 179	Literacy, Science & Math	3
ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
ED 222	Constructive Discipline	3

ED 282	Working w/Child w/Special Need	3
ENG 221	Children's Literature	4
GS 106	Phy Sci: Prin of Earth Science	4
HDFS 225	Infant and Child Development	4
HDFS 233	Intro to Early Childhood Education	3
HDFS 248	Learning Experiences/Children	3
HDFS 261	Working with Individuals and Families	3
HDFS 280	CWE Childhood Development	1 TO 12
PE 231	Lifetime Health & Fitness	3
	Electives	8

Students need to take a minimum of **2 credits** of HDFS 280 Cooperative Work Experience (CWE).

Students with prior Early Childhood Education certification may be eligible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 90

EARLY CHILDHOOD EDUCATION, ONE-YEAR CERTIFICATE

Students who successfully complete all Early Childhood Education, One-Year Certificate requirements will be able to:

•

Plan and implement developmentally appropriate curriculum.

•

Document children's learning.

•

Analyze children's development according to the four primary developmental domains.

•

Identify collaborative parent partnership strategies.

•

Contribute as an effective team member.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Child and Family Studies, One-year Certificate Program Map.*

Communication

COMM 218Z	Interpersonal Communication	4

Computation

MTH 105Z	Math in Society	4

Human Relations

ANTH 110	Introduction to Cultural Anthropology	3

Program Courses

ED 110	Principles Of Observation	3
ED 131	Positive Guidance: Young Child	3
ED 152	Creativity & the Arts	3
ED 179	Literacy, Science & Math	3
ED 222	Constructive Discipline	3
ED 282	Working w/Child w/Special Need	3
HDFS 225	Infant and Child Development	4
HDFS 248	Learning Experiences/Children	3
HDFS 261	Working with Individuals and Families	3
HDFS 280	CWE Childhood Development	1 TO 12
WR 121Z	Composition I	4
	Electives	3

Students need to take a minimum of **2 credits** of HDFS 280 Cooperative Work Experience (CWE).

Students with prior Early Childhood Education certification may be eligible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 48

CHILDHOOD CARE AND EDUCATION, CERTIFICATE

Students just entering the field of early childhood or those child care providers who have not taken credit classes can earn a certificate by completing 16 credit hours of the Associate of Applied Science degree in Early Childhood Education.

Students who successfully complete all Childhood Care and Education Certificate requirements will be able to:

- Identify the stages of typical child development.
- Observe, analyze and reflect on children's developmental stages.
- Implement and evaluate developmentally appropriate activities.

PROGRAM COURSE REQUIREMENTS

Program Courses

ED 110	Principles Of Observation	3
ED 131	Positive Guidance: Young Child	3
ED 152	Creativity & the Arts	3
	or	
ED 179	Literacy, Science & Math	3
	or	
HDFS 248	Learning Experiences/Children	3

HDFS 225	Infant and Child Development	4
	Electives	3

Total Credit Hours: 16

WORKING WITH FAMILIES, CAREER PATHWAY CERTIFICATE

Students just entering the field of early childhood or those who would like to focus on credit classes related to working with families of young children can earn a Working with Families Career Pathway Certificate by completing 12 credit hours of the Associate of Applied Science degree in Early Childhood Education.

Students who successfully complete all Working with Families, Career Pathway Certificate requirements will be able to:

- Recognize unique strengths and needs of diverse families.
- Analyze current social issues that impact faculty development.

PROGRAM COURSE REQUIREMENTS

Program Courses

ANTH 110	Introduction to Cultural Anthropology	3
ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
HDFS 201	Contemporary Families in The U.S.	3
HDFS 261	Working with Individuals and Families	3

Total Credit Hours: 12

CHILD CARE DIRECTOR, CAREER PATHWAY CERTIFICATE

Students who would like to focus on credit classes related to being a child care center director or site director can earn a Child Care Director Career Pathway Certificate by completing 12 or 13 credit hours of the Associate of Applied Science degree in Child and Family Studies.

Students who successfully complete all Child Care Director, Career Pathway Certificate requirements will be able to:

- Identify professional behaviors and standards.
- Recognize the unique strengths and needs of diverse families.

PROGRAM COURSE REQUIREMENTS

Program Courses

ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
HDFS 233	Intro to Early Childhood Education	3

Choose one of the following:

ANTH 110	Introduction to Cultural Anthropology	3
HDFS 261	Working with Individuals and Families	3

Choose one of the following:

ED 282	Working w/Child w/Special Need	3
ED 110	Principles Of Observation	3
ED 131	Positive Guidance: Young Child	3
HDFS 225	Infant and Child Development	4
HDFS 248	Learning Experiences/Children	3

Total Credit Hours: 12-13

Heavy Equipment/Diesel Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/heavy-equipment-diesel-technology.php

The Heavy Equipment/Diesel program trains students to diagnose, troubleshoot, service, and rebuild heavy equipment and diesel engines. This career field is experiencing rapid growth and technicians are in high demand. The placement rate for graduates of this program is high.

Students pay additional fees for a set of Snap-On brand tools, basic tool bag, and student uniform. Contact the program advisors or refer to the department website for specific details.

Program Requirements

Students must meet or exceed the scores needed for placement into the following courses to begin the Heavy Equipment/Diesel Technology program:

1. WR 115
2. MTH 075

Facilities

The Heavy Equipment/Diesel program campus is located at the world class Advanced Transportation Technology Center, 2000 West Oak Street, Lebanon, Oregon, 97355. The training facilities include well-equipped classrooms, laboratories, and shops. The Heavy Equipment/Diesel shop facility houses two 6-ton overhead bridge cranes and a Chassis Dynamometer with data acquisition capabilities.

HEAVY EQUIPMENT/DIESEL TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Heavy Equipment/Diesel Technology, Associate of Applied Science degree requirements will be able to:

- Follow safe shop practices.
- Apply fundamental industry skills and concepts to unfamiliar situations.
- Demonstrate proper use and care of shop and personal tools.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Heavy Equipment/Diesel Technology, Associate of Applied Science Program Map.*

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing or higher	3

Computation

MTH 075	Variables and Linear Equations	4
	or	
AUT 290	Math & Measurement for Transportation Technicians	4

MTH 075 or higher will fulfill program requirements.

Human Relations

HVE 226	Customer Service for Heavy Equipment Technicians	3

Program Courses

HE 110	First Aid and CPR	1
HVE 112	Employability Skills	3
HVE 114	Fundamental Shop Skills	3
HVE 116	Electrical & Electronic Systems	10
HVE 126	Steering, Suspension, and Brakes	10
HVE 136	Power Train Systems	10
HVE 214	Mobile Hydraulics	10
HVE 224	Heavy Equipment/Diesel Engines	10
HVE 234	Diesel Engine Performance, Efficiency, and Ecology	10
HVE 236	Mobile Air Conditioning & Comfort System	3
MA3. 396B	Manufacturing Processes I	2
WE1. 2800	CWE Heavy Equipment/Diesel Technology	6
WLD 170	Welding I	2
WLD 171	Welding II	2

Approved Electives

Program faculty may approve elective courses to be taken in addition to above requirements.

HVE 122	Service and Repair	3

Any WLD or MA3. course may be taken to fulfill the elective requirement.

Other elective courses may be approved by Heavy Equipment/Diesel program faculty advisors.

Total Credit Hours: 92

Industrial Pipe Trades: Fitting & Welding

https://www.linnbenton.edu/future-students/explore-lb/programs/welding.php

The Industrial Pipe Trades; Fitting and Welding Program provides professional-level training for people interested in employment in the industrial pipe trades. The program focuses on students developing employable-level skills in the areas of pipe fitting and pipe welding. The 2-Year Associate of Applied Science (AAS) degree builds on the first year of training and adds additional pipe welding skill development in the second year with the opportunity to become certified in plate and pipe welding during the second year of the program. Subject matter covered in the AAS degree program includes safety, math and blueprint reading for the pipe trades, ISO drawings, layout, tool usage, material preparation and fit-up, pipe welding practices in the 2G, 5G, and 6G positions with shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), and wire-feed welding processes, field welding, alternative joining methods, pipe codes and guidelines, resume' development and job search skills. Students primarily interested in pipe fitting may consider the fully embedded 1-Year Pipefitting Certificate of Completion.

Program Requirements

The Welding and Fabrication Technology Department offers several options to prepare students for entry-level positions in welding, welding repair, welder/fabricator, industrial mechanics and pipefitter/welder; all of them provide training in welding procedures, print reading, fabrication and layout. Students wanting to enter the program should have basic math and high school-level reading skills. Interested students should consider an Associate of Applied Science degree or a One-year Certificate of Completion. *As many of the courses run in sequence, it is recommended that students enter the program Fall Term. Students who do not begin Fall Term should work with program faculty to design an education plan based on their point of entry that leads to successful completion within a reasonable timeline.*

Facilities

The Welding Shop and Fabrication Shop contain a variety of equipment used by industry professionals. Students learn to weld with SMAW, GMAW, FCAW, and GTAW on both new and vintage welding equipment. Shop areas also have modern processing equipment such as plasma cutting, oxy/act cutting, bandsaws, shears, beveling equipment, pipe threading, and other specialized pipe trades tools. Modern fume extraction is present at each welding booth for safety and comfort while welding.

INDUSTRIAL PIPE TRADES; FITTING AND WELDING, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Industrial Pipe Trades: Fitting and Welding, Associate of Applied Science degree requirements will be able to:

- Analyze and interpret isometric pipe drawings and the symbols used in them and what they symbolize.
- Design and construct piping by taking field measurements and creating a working drawing to build off of.
- Explain the differences between different welding processes and describe why one might be better suited for specific uses.
- Choose the correct pipe fittings for needed application and show how to properly install them.
- Demonstrate the ability to apply a sound weld using multiple welding processes in multiple positions.
- Identify the many types of pipe supports and hardware and describe why and when they are used.
- Employ safe working practices in an industrial setting to produce logical answers while troubleshooting piping issues.
- Identify factors specific to field welding that differ from shop welding of pipe.
- Name alternative types of joining methods for piping systems and typical uses for each type.
- Identify common welding-related Codes in use in the United States and those Codes with specific areas related to the Industrial Pipe Trades.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Industrial Pipe Trades; Fitting and Welding, Associate of Applied Science Program Map.*

Communication

WLD 151	Technical Writing For Welders	3
	or	
IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing	3

WR 115 or higher will fulfill program requirements.

Computation

WLD 150	Math & Measurement For Welders	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Human Relations

APR 110	Essential Workplace Skills for Success	3
	or	
WLD 152	Teamwork Skills For Welders	3
	or	
	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Required Courses

HE 110	First Aid and CPR	1
	or	
HE 112	Emergency First Aid	1
NDT 100	Intro to Nondestructive Test	3
PFW 131	Introduction to Pipe Processing & Preparation	3
PFW 132	Intermediate Pipe Processing and Preparation	3
PFW 133	Advanced Pipe Processing and Layout	4
PFW 166	Pipe Welding Practices I	4
PFW 167	Pipe Welding Practices II	4
PFW 168	Pipe Welding Practices III	4
PFW 170	Introduction to Pipe Fitting	1
PFW 171	Intermediate Pipe Fitting	1
PFW 172	Advanced Pipe Fitting	3
PFW 182	Industrial Metal Trades Safety	3
PFW 220	Pipe Fit-up & Field Welding I	5
PFW 221	Pipe Fit-up & Field Welding II	5
PFW 235	Pipe Trades Prep for Certification	5
PFW 242	Alternative Joining Methods	2
PFW 255	Welder Certification Plate & Pipe	5
PFW 263	Pipe Trades Capstone	5
PFW 269	Pipe Welding Practices IV	5
WLD 130	Print Reading Applications	4
WLD 182	Career Planning & Interview Skills	1
WLD 230	Advanced Fab Techniques	3
WLD 250	Practical Metallurgy	3

	Electives	4

Approved Electives

WE1. 2802 (p. 211) CWE Welding, WLD 281 Welding Seminar, or any APR, AUT, MA3., MT3., NDT, or WLD course may be taken to fulfill the elective requirement. Other courses may be approved after meeting with an advisor.

Total Credit Hours: 91

INDUSTRIAL PIPE TRADES; FITTING AND WELDING, ONE-YEAR CERTIFICATE

Students who successfully complete all Industrial Pipe Trades: Fitting and Welding, One-Year Certificate requirements will be able to:

- Analyze and interpret isometric pipe drawings and the symbols used in them and what they symbolize.
- Explain the differences between different welding processes and describe why one might be better suited for specific uses.
- Choose the correct pipe fittings for needed application and show how to properly install them.
- Identity the many types of pipe supports and hardware and describe why and when they are used.
- Employ safe working practices in an industrial setting to produce logical answers while troubleshooting piping

issues.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Industrial Pipe Trades; Fitting and Welding, One-year Certificate Program Map.*

Communication

WLD 151	Technical Writing For Welders	3
	or	
IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing	3

WR 115 or higher will fulfill program requirements.

Computation

WLD 150	Math & Measurement For Welders	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Human Relations

APR 110	Essential Workplace Skills for Success	3
	or	
WLD 152	Teamwork Skills For Welders	3
	or	
	Human Relations	3

See the Related Instruction Requirements section for a list of approved courses.

Program Courses

HE 110	First Aid and CPR	1
	or	
HE 112	Emergency First Aid	1
NDT 100	Intro to Nondestructive Test	3
PFW 131	Introduction to Pipe Processing & Preparation	3
PFW 132	Intermediate Pipe Processing and Preparation	3
PFW 133	Advanced Pipe Processing and Layout	4
PFW 166	Pipe Welding Practices I	4
PFW 167	Pipe Welding Practices II	4
PFW 168	Pipe Welding Practices III	4
PFW 170	Introduction to Pipe Fitting	1
PFW 171	Intermediate Pipe Fitting	1
PFW 172	Advanced Pipe Fitting	3
WLD 130	Print Reading Applications	4
WLD 182	Career Planning & Interview Skills	1

Total Credit Hours: 46

Machine Tool Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/machine-tool-technology.php

The Machine Tool Technology program curriculum is designed to develop students' skills in a wide variety of machining processes. Instruction includes training on manual lathes, milling machines, band saws, surface grinders, and other equipment. Computer Numerical Control (CNC) training centers on utilization of modern CNC machines and Computer Aided Manufacturing (CAM)

software. Students attain the skills required for a career in the machinist's trade with a combination of classroom learning and hands-on training. Safety and skills for successful employment are emphasized throughout the curriculum. The Machine Tool Technology program offers an Associate of Applied Science degree, a Machine Tool Technology One-Year Certificate, and a CNC Machinist Certificate.

Facilities

The Machine Tool Technology department's new state-of-the-art facility includes a large machine shop space that houses both manual and CNC equipment, a dedicated computer lab, an inspection/metrology lab, and multiple classrooms. Facilities, lab equipment, and machines are all designed to allow comprehensive instruction in the tools of the machinist's trade. The Machine Tool Technology Department is committed to providing training on current, state-of-the-art manufacturing software.

MACHINE TOOL TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Machine Tool Technology, Associate of Applied Science degree requirements will be able to:

- Set up and safely operate manual machine tools including knee-mills, lathes, band saw, surface grinder, and other machine shop equipment.
- Demonstrate competency in various manufacturing techniques.
- Set up and operate various CNC Vertical Machining Centers and CNC Turning Centers.
- Read, write, and edit machine code (G&M code).
- Interpret technical drawings and understand Geometric Dimensioning and Tolerancing principles.
- Understand Computer Aided Design, Computer Aided Manufacturing, and Computer Numeric Control (CAD/CAM/CNC) technologies.
- Use Mastercam and Solidworks software proficiently.
- Apply good inspection practices and know how to use inspection tools and equipment.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Machine Tool Technology, Associate of Applied Science Program Map.*

Computation

MA3. 409	Mathematics for Machinists	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Communication

	Communication	3

IN4. 164 (p. 169) Technical Writing for CTE or WLD 151 Technical Writing for Welders is recommended.

See the Related Instruction Requirements (p. 57) section for a list of approved courses.

Human Relations

	Human Relations	3

MT3. 802 (p. 177) Service Skills for Technicians is recommended.

See the Related Instruction Requirements (p. 57) section for a list of approved courses.

Program Courses

HE 110	First Aid and CPR	1
MA3. 396	Manufacturing Processes I	6
MA3. 397	Manufacturing Processes II	6
MA3. 398	Manufacturing Processes III	6
MA3. 405	Inspection I	2
MA3. 406	Inspection II	2
MA3. 412	CAM I	3
MA3. 416	CNC: Special Projects	4
MA3. 420	CNC: Mill	4
MA3. 421	CNC: Lathe	4
MA3. 427	Solidworks I	3
MA3. 428	Solidworks II	3
MA3. 431	Basic Print Reading: Metals	2
MA3. 432	Introduction To Mastercam	3
MA3. 433	Mastercam II	3
MA3. 434	Mastercam III	3
MA3. 437	Materials Science	2
MA3. 438	Manufacturing Processes IV	3
MA3. 439	Manufacturing Processes V	3
MA3. 451	Advanced CNC Technology I	3
MA3. 452	Advanced CNC Technology II	3
MA3. 453	Advanced CNC Technology III	3
MA3. 454	Workholding for Machining	2
WLD 170	Welding I	2
	Approved Electives	4

Students are advised to speak with a faculty advisor about approved elective coursework.

Approved Electives

ART 131	Drawing I	4

ART 154	Ceramics I	4
EG4. 412	Introduction to Inventor	3
EG4. 414	Introduction to Fusion 360	3
MA3. 396B	Manufacturing Processes I	2
MA3. 397B	Manufacturing Processes II	2
MA3. 398B	Manufacturing Processes III	2
MT3. 803	Industrial Safety	2
MT3. 817	Drive Systems	2
MT3. 819	Bearings & Lube Systems	2
MT3. 821	Electrical Systems Troubleshooting	4
SPN 101	First Year Spanish I	4
SPN 102	First Year Spanish II	4
SPN 103	First Year Spanish III	4
WE1. 280I	CWE Manufacturing Technology	1-12
WLD 171	Welding II	2
WLD 177	Gas Tungsten Arc Welding I	2
WLD 178	Gas Tungsten Arc Welding II	2
WLD 281	Welding Seminar	1-10

Any PE Activity course may also be taken to fulfill the elective requirement.

Total Credit Hours: 90

MACHINE TOOL TECHNOLOGY ONE-YEAR CERTIFICATE

Students who successfully complete all Machine Tool Technology, One-year Certificate requirements will be able to:

- Set up and safely operate manual machine tools, including knee-mills, lathes, drill press, band saw, surface grinder, and other machine shop equipment and an intermediate level.
- Set up and operate various CNC Virtical Machining Centers and CNC Turning Centers at an intermediate level.
- Read, write, and edit CNC machine code (G&M code).
- Understand technical drawings.
- Demonstrate good inspection skills.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Machine Tool Technology, One-year Certificate Program Map.*

Computation

MA3. 409	Mathematics for Machinists	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Communication

	Communication	3

IN4. 164 (p. 169) Technical Writing for CTE or WLD 151 Technical Writing for Welders is recommended.

See the Related Instruction Requirements (p. 57) section for a list of approved courses.

Human Relations

	Human Relations	3

MT3. 802 Service Skills for Technicians is recommended.

See the Related Instruction Requirements (p. 57) section for a list of approved courses.

Program Courses

MA3. 396	Manufacturing Processes I	6
MA3. 397	Manufacturing Processes II	6
MA3. 398	Manufacturing Processes III	6
MA3. 405	Inspection I	2
MA3. 406	Inspection II	2
MA3. 416	CNC: Special Projects	4
MA3. 420	CNC: Mill	4
MA3. 421	CNC: Lathe	4
MA3. 431	Basic Print Reading: Metals	2

Total Credit Hours: 46

CNC MACHINIST CERTIFICATE

Students who successfully complete all CNC Machinist Certificate requirements will be able to:

- Perform basic set up and operation of CNC Vertical Machining Centers.
- Perform basic set up and operation of CNC Turning Centers.
- Operate Mastercam and Solidworks software.
- Safely setup and operate Manual Mills and Lathes at a basic level.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for Less-Than-One-Year Certificate programs. For information on the advised sequence of program courses, see the CNC Machinist Certificate Program Map.

Program Courses

MA3. 396B	Manufacturing Processes I	2
MA3. 416	CNC: Special Projects	4
MA3. 420	CNC: Mill	4
MA3. 421	CNC: Lathe	4
MA3. 427	Solidworks I	3
MA3. 428	Solidworks II	3
MA3. 432	Introduction To Mastercam	3
MA3. 433	Mastercam II	3

MA3. 434	Mastercam III	3

Total Credit Hours: 29

Mechatronics/Industrial Automation Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/mechatronics.php

Mechatronics offers a hands-on program encompassing topics ranging from traditional mechanical skills to state-of-the-art electronics. The Mechatronics Program at LBCC is known for its success in meeting the rapidly-growing need for highly-trained industrial automation technicians to support a wide array of businesses and industries.

With a focus on troubleshooting at the systems level, graduates from the Mechatronics Program can think and test their way through any kind of equipment malfunction. Cross-training on a variety of similar brand-specific equipment produces a technician capable of rapid comprehension when encountering unfamiliar equipment and/or devices in the workplace. With an eye toward energy efficiency, graduates can redesign/reconfigure existing equipment to streamline processes, saving time, money, and the environment.

Successful mechatronics technicians are hands-on learners who also gain the skill to think analytically about interrelated systems. Such technicians are self-starters, willing to learn on-the-job and work well alone and in teams.

Mechatronics technicians are in high demand in a diverse spectrum of industries including: aerospace, agriculture, food processing, HVAC controls, renewable energy, semiconductor processing, machining, computer networking, animatronics, and automated manufacturing.

MECHATRONICS/INDUSTRIAL AUTOMATION TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Mechatronics /Industrial Automation Technology, Associate of Applied Science degree requirements will be able to:

- Troubleshoot, maintain and repair mechanical and electrical systems.
- Locate and analyze technical documents, prints, and schematics.
- Collaborate in design and rebuilding projects.
- Apply mathematics and scientific principles to troubleshooting, maintenance, and repair situations.
- Promote energy efficiency and industrial sustainability.
- Communicate effectively in writing and verbally with fellow workers and customers.
- Program, troubleshoot and maintain computer controlled industrial process systems.
- Cultivate a positive, professional workplace.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Mechatronics & Industrial Automation, Associate of Applied Science Program Map.*

Computation

The 3 credit Computation related instruction requirement is embedded in courses below. All other credits apply toward program requirements.

MT3. 812	Mechanical Systems	4
MT3. 833	Principles of Technology	5
MT3. 834	Principles of Technology II	5

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WLD 151	Technical Writing For Welders	3
	or	
WR 121Z	Composition I	4

WR 121Z: 3 credits apply towards the communication requirements; one credit applies toward program.

Human Relations

MT3. 802	Service Skills for Technicians	3

Program Courses

MT3. 803	Industrial Safety	2
MT3. 805	Predictive & Preventive Maintenance	3
MT3. 812	Mechanical Systems	4
MT3. 816	CAD for Factory Automation	4
MT3. 817	Drive Systems	2
MT3. 819	Bearings & Lube Systems	2
MT3. 821	Electrical Systems Troubleshooting	4
MT3. 822	Troubleshooting Motors & Controls	4
MT3. 823	Industrial Sensors & Actuators	3
MT3. 824	Programmable Logic Controllers	3
MT3. 825	Process Control & Instrumentation	3
MT3. 826	Advanced PLC Troubleshooting	3
MT3. 827	Automated Material Handling	3
MT3. 830	Industrial Pneumatics Systems	3
MT3. 832	Energy & Sustainability	3
MT3. 833	Principles of Technology	5
MT3. 834	Principles of Technology II	5
MT3. 836	Industrial Hydraulics Systems	3

MT3. 846	Pumps and Valves	2
MT3. 897	Capstone Project I	3
MT3. 898	Capstone Project II	3
MT3. 899	Capstone Project & Assessment	3
PE 231	Lifetime Health & Fitness	3
	Approved Electives	11

Approved Technical Electives

Machining Focus

MA3. 396B	Manufacturing Processes I	2
MA3. 397B	Manufacturing Processes II	2
MA3. 420	CNC: Mill	4
MA3. 421	CNC: Lathe	4
MA3. 427	Solidworks I	3

Welding Focus

WLD 170	Welding I	2
WLD 171	Welding II	2
WLD 172	Prep For Certification	2
WLD 130	Print Reading Applications	4
WLD 174	Basic Wire-Feed Welding	2

Industrial Refrigeration Focus

MT3. 847	HVAC System Controls	3
MT3. 848	EPA Technician Certification	2
MT3. 849	Heating Systems	2
MT3. 854	Refrigeration Servicing	2
MT3. 855	Refrigeration Troubleshooting	2

MT3. 801 (p. 177) *Mechatronics Orientation can also be used to fulfill elective requirements.*

Total Credit Hours: 90-91

INDUSTRIAL AND BUILDING MECHANIC, ONE-YEAR CERTIFICATE

The Industrial and Building Mechanic, One-year Certificate prepares students to work in a wide variety of occupations that require an understanding of energy efficiency, sustainability and maintenance, and troubleshooting skills. Occupations include: facilities operation and maintenance, RHVAC, industrial maintenance, and operations.

Students who successfully complete all Industrial & Building Mechanic, One-year Certificate program requirements will be able to:

- Be prepared for many green occupations across a variety of industries.
- Have a fundamental understanding of energy efficiency, sustainability, green technologies, and maintenance and troubleshooting procedures.
- Apply reading, workplace math skills, and customer service skills on-the-job.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Industrial and Building Mechanic, One-year Certificate Program Map.*

Computation

MTH 075	Variables and Linear Equations or higher	4

Communication

IN4. 164	Technical Writing for CTE	3
	or	
WLD 151	Technical Writing For Welders	3
	or	
WR 121Z	Composition I	4

WR 121Z: 3 credits apply towards the communication requirements; one credit applies toward program.

Human Relations

MT3. 802	Service Skills for Technicians	3

Program Courses

MT3. 803	Industrial Safety	2
MT3. 805	Predictive & Preventive Maintenance	3
MT3. 817	Drive Systems	2
MT3. 819	Bearings & Lube Systems	2
MT3. 821	Electrical Systems Troubleshooting	4
MT3. 822	Troubleshooting Motors & Controls	4
MT3. 824	Programmable Logic Controllers	3
MT3. 832	Energy & Sustainability	3
MT3. 830	Industrial Pneumatics Systems	3
	or	
MT3. 836	Industrial Hydraulics Systems	3
MT3. 846	Pumps and Valves	2
MT3. 848	EPA Technician Certification	2
MT3. 849	Heating Systems	2
MT3. 854	Refrigeration Servicing	2
MT3. 855	Refrigeration Troubleshooting	2

Total Credit Hours: 46-47

HEATING, VENTILATION, & AIR CONDITIONING (HVAC) TECHNOLOGY, CAREER PATHWAY CERTIFICATE

PROGRAM COURSE REQUIREMENTS

Required Courses

MT3. 821	Electrical Systems Troubleshooting	4
MT3. 847	HVAC System Controls	3
MT3. 848	EPA Technician Certification	2
MT3. 849	Heating Systems	2
MT3. 854	Refrigeration Servicing	2
MT3. 855	Refrigeration Troubleshooting	2

Total Credit Hours: 15

MECHATRONICS: MAINTENANCE, CAREER PATHWAY CERTIFICATE

PROGRAM COURSE REQUIREMENTS

Required Courses

MT3. 803	Industrial Safety	2
MT3. 805	Predictive & Preventive Maintenance	3
MT3. 812	Mechanical Systems	4
MT3. 817	Drive Systems	2
MT3. 819	Bearings & Lube Systems	2
MT3. 821	Electrical Systems Troubleshooting	4
MT3. 822	Troubleshooting Motors & Controls	4
MT3. 824	Programmable Logic Controllers	3
MT3. 832	Energy & Sustainability	3
MT3. 836	Industrial Hydraulics Systems	3
MT3. 846	Pumps and Valves	2

Total Credit Hours: 32

Medical Assisting

https://www.linnbenton.edu/future-students/explore-lb/programs/medical-assistant.php

The Medical Assisting Program is designed to be completed in four terms of full-time attendance and trains students in cognitive, psychomotor, and affective domains. The program covers a variety of basic medical duties in the outpatient setting. These duties may include taking patient histories; recording patients' vital signs; collecting and preparing laboratory specimens; preparing patients for exams and procedures; taking patient EKGs; phlebotomy, wound dressing, injections, immunizations and more. Medical assistants may also have administrative duties to include scheduling appointments, telephone messaging, and managing the schedule. These duties and their associated knowledge and skills are taught in both practical and didactic educational environments. Program graduates are eligible to take the national certification examination, conducted by the Certifying Board of the American Association of Medical Assistants. Successful completion of this exam grants the graduate the credential of CMA (AAMA).

The Medical Assisting program is accredited by the Commission on Accreditation of Allied Health Educational Programs (CAAHEP) in collaboration with the American Association of Medical Assistants.

The program is offered at LBCC's Healthcare Occupations Center (HOC) in Lebanon. Students will also be required to participate in 270 hours of an unpaid practicum experience that may require driving to towns in the area.

Facilities

The Medical Assisting program has a fully functional clinical classroom with simulated exam rooms and equipment, and a fully functional physician office laboratory. The Healthcare Occupations Center (HOC) in Lebanon, Oregon, where the program is located, has large computer labs and ample modern classroom space with multimedia technology. The presence of other allied health programs and students provides an environment for medical assisting students to network and study with interdisciplinary students.

Admission Requirements

LBCC's healthcare-related programs have limited enrollment and special application deadlines. Interested students should review the Medical Assisting application guide on the Medical Assistant webpage for detailed application and admissions information. Applications are accepted on a first-come, first-served basis with preference given to residents of the Linn-Benton Community College service district.

Prior to admission, applicants are required to:

- Must have successfully completed high school math and English/writing courses.
- Be in good academic and financial standing at LBCC in order to be admitted to this program.
- Submit a completed LBCC online admissions application form.

Post-admission and prior to the start of classes, students are required to:

- Have current immunizations.
- Complete American Heart Association CPR & First Aid.
- Pass a criminal background check and drug screening.
- Submit supplemental application materials located in application guide.

MEDICAL ASSISTING, ONE YEAR CERTIFICATE

Students who successfully complete all Medical Assisting, One-year Certificate program requirements will be able to:

- Demonstrate proficiency in modeling professional and ethical behaviors, including confidentiality, positive interpersonal interactions, and diplomacy.

- Demonstrate proficiency in efficient management of multiple tasks, both clinical and administrative.
- Demonstrate effective use of current technology, as well as written and oral communication, in completing medical assisting tasks.
- Successfully complete all competencies required by the Medical Assistant Education Review Board and the Commission on Accreditation of Allied Health Education Professionals.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Medical Assisting, One-year Certificate Program Map.*

Communication		
CMA 151	Communication for the Medical Assistant	3
Computation		
CMA 149	Reimbursement in Healthcare	3
Human Relations		
CMA 152	Human Relations for Medical Assistants	2
CMA 144	Law and Ethics for the Medical Assistant	3

CMA 144: One credit applies toward the Human Relations requirement, two credits apply toward program requirements.

Program Courses		
CMA 137	Administrative Office for the Medical Assistant	3
CMA 139	Finance in the Medical Office	3
CMA 141	Medical Terminology for Medical Assistants	4
CMA 145	Pathology for the Medical Office	3
CMA 146	Pharmacology for the Medical Assistant	3
CMA 148	Practicum Seminar and Exam Coaching	3
CMA 150	Coding for Medical Assistants	2
CMA 240	Medical Assistant Clinical Block 1	4
CMA 243	Medical Assistant Lab Block I	4
CMA 244	Medical Assisting Clinical Block II	4
CMA 246	Medical Assistant Lab Block 2	4
CMA 250	Administrative Practicum	3
CMA 260	Clinical Practicum	6

Total Credit Hours: 57

Nondestructive Testing and Evaluation

https://www.linnbenton.edu/future-students/explore-lb/programs/ndt.php

The field of Nondestructive Testing (NDT) and Evaluation involves a family of scientific techniques and practices that reveal the internal and external characteristics of materials without impairing their future usefulness. NDT technicians routinely use ultrasonic, penetrant, magnetic particle, weld inspection, and radiographic inspection techniques to accept or reject castings, fabrications, or repairs that may impact the quality, durability and reliability of materials and goods in the areas of aerospace, construction, transportation, turbine and power generation, petrochemical industry, structural, plant infrastructure, manufacturing and many more areas.

NONDESTRUCTIVE TESTING (NDT) AND EVALUATION, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Nondestructive Testing and Evaluation, Associate of Applied Science degree requirements will be able to:

- Develop and maintain quality control programs in the areas of Visual (VT), Liquid Penetrant (PT), Magnetic Particle (MT), Ultrasonic (UT), and Radiographic (RT) Testing.
- Set up and calibrate NDT equipment, as well as interpret and evaluate results based upon nondestructive testing methods with respect to applicable codes, standards and specifications.
- Prepare to be a nondestructive inspection technician in accordance with the American Society for Nondestructive Testing (ASNT) certification examination recommendations.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Non-Destructive Test and Evaluation, Associate of Applied Science Program Map.*

Communication		
IN4. 164	Technical Writing for CTE	3

WR 121Z (p. 215) or higher will also fulfill program requirements.

Computation		
NDT 181	Math for Non-Destructive Testing	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Human Relations		
MT3. 802	Service Skills for Technicians	3
	or	

	Human Relations	3

See the Related Instruction Requirements (p. 56) section for a list of approved courses.

Program Courses

MA3. 396B	Manufacturing Processes I	2
NDT 100	Intro to Nondestructive Test	3
NDT 101	Prepping For Success in CTE	3
NDT 110	Visual Inspection	5
NDT 121	Liquid Penetrant Level I & II	4
NDT 125	Magnetic Particle Testing Level I and II	4
NDT 130	Radiation Safety Training	5
NDT 140	Radiographic Testing Level I	5
NDT 150	Ultrasonic Testing Level I	5
NDT 160	Introduction to Metallurgy	5
NDT 240	Radiographic Testing Level II	5
NDT 250	Ultrasonic Testing Level II	5
NDT 255	Ultrasonic Testing Immersion	4
NDT 260	Intro to Phase Array Ultrasonic Testing (PAUT)	5
NDT 271	Digital and Computed Radiography	5
NDT 272	Advanced Radiography	5
NDT 278	Nondestructive Testing Review	4
NDT 280	CWE Nondestructive Testing & Evaluation	1-12
WLD 170	Welding I	2
	Electives	4

Students must take a minimum of **3 credits** of NDT 280 Cooperative Work Experience (CWE).

Any EG4., MA3., PFW, or WLD course that is not already required by the program may be taken to fulfill the elective requirement. Additional credits of NDT 280 may also be taken to fulfill the elective requirement.

Total Credit Hours: 93

Nursing

https://www.linnbenton.edu/future-students/explore-lb/programs/nursing.php

The Nursing program is a two-year associate of applied science degree program designed to develop highly skilled generalist nurses. The Nursing program accepts one class per year beginning fall term. Graduates are eligible to take the National Council Licensing Examination for Registered Nurse licensing (NCLEX-RN). The coursework completed for the ADN may be transferable to RN-to-BSN or RN-to-MSN programs. Students who apply to the Nursing program should have a strong academic background preparing them for the educational challenges of first- and second-year coursework. Students should have strong technical writing skills and familiarity with the American Psychological Association (APA) format. Students are evaluated in all aspects of the program, including clinical practice, and are expected to be an active participant in their education on a daily basis.

Required clinical rotations occur in a variety of healthcare settings. Clinical opportunities occur during day, evening, night, weekend and holiday shifts. Educational and learning opportunities are primarily located in, but are not limited to, Linn and Benton counties.

The Oregon State Board of Nursing (OSBN) has approved the LBCC Associate Degree program as meeting all requirements to provide pre-licensure nursing education. OSBN reviews applicants for RN licensure upon completion of LBCC's Nursing program and is responsible for ensuring that approved applicants meet certain criteria regarding issues of substance abuse, criminal histories and felony convictions. Specific questions regarding these issues should be directed to the Oregon State Board of Nursing.

OSBN
17938 SW Upper Boones Ferry Rd, Portland, OR 97224
(971) 673-0685
https://www.oregon.gov/osbn/Pages/index.aspx

Program Requirements

LBCC's healthcare-related programs have limited enrollment and special application deadlines. Interested students should review the Nursing application guide on the Nursing webpage for detailed application and admissions information. Admission consideration is based on a point system and not a first-come, first-served basis.

All courses must be completed with a grade of C or better. All nursing core courses must be completed at LBCC and taken in the specified sequence. Students accepted into the program will need to complete and pass the criminal background check and drug screen, and show proof of current immunizations and CPR certification. **All program applicants must possess a current unencumbered Nurse Assistant certification in the state of Oregon.**

NURSING, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Nursing, Associate of Applied Science degree requirements will be able to:

- Provide nursing care to diverse individuals and families across the lifespan in a variety of settings, ensuring care is compassionate and culturally and age-appropriate.

- Engage in multidisciplinary teams to work collaboratively in the provision of safe care.
- Utilize evidence, clinical judgment, interprofessional perspectives, and patient preferences in the provision of care.
- Advocate for and provide nursing care using principles of ethics, quality improvement, and leadership.
- Demonstrate competency using patient care technologies, information systems, and communication devices that support compliant and effective nursing practice.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Nursing, Associate of Applied Science Program Map.*

Pre-Application Courses

The Nursing application guide can be found on the Nursing webpage and includes detailed application and admissions information. All pre-application courses must be completed with a grade of C or better.

MTH 095	Intermediate Algebra	4
WR 121Z	Composition I	4
BI 231	Human Anatomy & Physiology	5

MTH 095 or higher: Satisfies the AAS related instruction Computation requirement.

WR 121Z: Satisfies the AAS related instruction Communication requirement.

Pre-Program Courses

All pre-program courses must be completed with a grade of C or better prior to beginning the Nursing program core courses.

BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
BI 234	Microbiology	4
NUTR 225	General Human Nutrition	3
PSY 215	Intro Developmental Psychology	3

PSY 215: Satisfies the AAS related instruction Human Relations requirement.

Program Courses

NUR 101A	Fundamentals of Nursing	5
NUR 101B	Fundamentals of Nursing Practice	4
NUR 102A	Introductory Medical-Surgical Care	5
NUR 102B	Introductory Medical-Surgical Practice	4
NUR 103A	Care Throughout the Lifespan	5
NUR 103B	Nursing Practice Throughout the Lifespan	4
NUR 201A	Advanced Medical-Surgical Care	5
NUR 201B	Advanced Medical-Surgical Practice	4
NUR 202A	Critical Transitions In Care	5
NUR 202B	Nursing Practice During Critical Transitions	4
NUR 203A	Preparation for Professional Practice	1
NUR 203B	Introduction to Professional Practice	6
NUR 222	Professional Practice Issues	2
NUR 268A	Drug Therapy & Nursing Implications	1
NUR 268B	Drug Therapy & Nursing Implications	1
NUR 268C	Drug Therapy & Nursing Implications	1
NUR 268D	Drug Therapy & Nursing Implications	1

Total Credit Hours: 91

Occupational Therapy Assistant

https://www.linnbenton.edu/future-students/explore-lb/programs/ota.php

The Occupational Therapy Assistant program is a two-year associate of applied science degree program designed to prepare students to function as an entry-level occupational therapy assistant (OTA). Occupational therapy assistants work under the supervision of occupational therapists to help clients develop, maintain, and/or regain health and function through the use of purposeful activity. They address physical, mental, and social components of activity as they work with clients to improve the underlying cause of impairment and/or to adapt activities for client success. Program graduates will be eligible and prepared to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT).

The program follows a hybrid delivery model and includes classroom, laboratory, and fieldwork components. Laboratory and clinical components are delivered locally and at partner sites.

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education.

ACOTE
c/o American Occupational Therapy Association (AOTA)
7501 Wisconsin Avenue, Suite 510E, Bethesda, MD 20814
(301) 652-6611
www.acoteonline.org

Program Requirements

LBCC's heathcare-related programs have limited enrollment and special application deadlines. Students should review the Occupational Therapy Assistant application guide on the Occupational Therapy Assistant webpage for detailed application and admissions information. Admission consideration is based on a point system and not a first-come, first-served basis.

All pre-application courses must be completed with a grade of C or better and all program courses must be completed with a grade of 75% or higher. Students accepted into the program will need to complete and pass the criminal background check and drug screen, and show proof of current immunizations and First Aid/CPR certification.

Students must fulfill all graduation requirements within 36 months of admission into the program. Students must complete Level II fieldwork within 15 months of completion of the didactic portion of the program.

OCCUPATIONAL THERAPY ASSISTANT, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Occupational Therapy Assistant, Associate of Applied Science degree requirements will be able to:

- Prepare for the national certification examination.
- Use a client-centered, holistic, occupation-based approach to assessment and intervention.
- Effectively interact with clients to facilitate accomplishment of established goals.
- Employ activity analysis, critical thinking and clinical reasoning to demonstrate entry-level technical skills and clinical competency.
- Follow current standards of practice and use evidence-based research.
- Display professional attitudes and behaviors. This involves following the profession's code of ethics and adhering to all laws and regulations governing the safe practice of occupational therapy.
- Communicate appropriately and effectively with clients, healthcare team members and the public. This includes both verbal and written communication.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Occupational Therapy Assistant, Associate of Applied Science Program Map.*

Pre-Application Courses

The OTA application guide can be found on the OTA webpage and includes detailed application and admissions information. All pre-application courses must be completed with a grade of C or higher prior to admission to the program.

BI 102	General Biology: Cell and Molecular Biology	4
	or	
BI 112	Cell Biology for Health Occup	4
	or	
BI 221Z	Principles of Biology: Cells	5
CRS 130	General Medical Terminology	3
MTH 075	Variables and Linear Equations	4
PSY 201Z	Introduction to Psychology I	4
	or	
PSY 202Z	Introduction to Psychology II	4
WR 121Z	Composition I	4

MTH 075 or higher: Satisfies the AAS related instruction Computation requirement.

PSY 201Z (p. 205) *or PSY 202Z* (p. 205)*: Satisfies the AAS related instruction Human Relations requirement.*

WR 121Z (p. 215)*: Satisfies the AAS related instruction Communication requirement.*

Program Courses

ANTH 110	Introduction to Cultural Anthropology	3
	or	
SOC 204Z	Introduction To Sociology	4
	or	
SOC 205Z	Social Change and Institutions	4
	or	
SOC 206Z	Social Problems	4
COMM 218Z	Interpersonal Communication	4
HE 225	Social Determinants of Health	4
	or	
PE 231	Lifetime Health & Fitness	3
OTA 115	OTA Anatomy & Physiology I	4
OTA 116	OTA Anatomy & Physiology II	4
OTA 117	Professionalism	1
OTA 118	Documentation	2
OTA 120	Occupational Therapy Foundations	4
OTA 122	Mental Health Theory & Practice	4
OTA 124	Physical Health Theory & Practice	4

OTA 125	Therapeutic Use of Self	1
OTA 128	Clinical Skills & Therapeutic Methods I	2
OTA 140	Activity Analysis	4
OTA 160	Level I Fieldwork	1
OTA 161	Fieldwork Seminar	1
OTA 222	Pediatric Theory & Practice	4
OTA 224	Geriatric Theory & Practice	3
OTA 228	Clinical Skills & Therapeutic Methods II	1
OTA 230	Innovative Theory & Practice	2
OTA 240	OTA Administration & Management	2
OTA 260	Level II Fieldwork A	10
OTA 270	Level II Fieldwork B	10
PSY 215	Intro Developmental Psychology	3
PSY 219	Intro To Abnormal Psychology	3

Total Credit Hours: 99-100

Phlebotomy

https://www.linnbenton.edu/future-students/explore-lb/programs/phlebotomy.php

The Phlebotomy program is a 15 week program consisting of 25 credits that prepares students for gainful employment as phlebotomists in the laboratory setting drawing blood from patients so that it can be analyzed by hospital/lab clinics. The program prepares students to sit for the American Society of Clinical Pathologists national certification exam.

To accomplish these goals, the program combines classroom instruction with lab work and practicum experience. Skill areas covered are: vacuum collections, capillary skin punctures, butterfly needles, blood cultures, specimen collection on adults, children and infants, and setup of EKG.

Students complete the training together and attend class for approximately 35 hours a week for the first 10 weeks of the program. A 100 hour practicum work experience is part of the training and takes place at area hospitals and clinics during the last 5 weeks of the program. Students are responsible for transportation to and from practicum sites.

Admission Requirements

LBCC's heathcare-related programs have limited enrollment and special application deadlines. Students should review the Phlebotomy application guide on the Phlebotomy webpage for detailed application and admissions information. Applications are accepted on a first-come, first-serve basis with preference given to residents of Linn-Benton Community College's service district.

Prior to admission, applicants are required to:

- Complete the online information session.
- Be in good academic and financial standing at LBCC in order to be admitted to this program.
- Submit a completed LBCC online admissions application form.

Post-admission and prior to the start of classes, students are required to:

- Have current immunizations.
- Complete American Heart Association CPR for Healthcare providers.
- Pass a criminal background check and drug screening.
- Submit supplemental application materials located in Program Bulletin.

The program is eligible for Financial Aid, but be aware that Financial aid will be used to pay the total amount of the program cost first before the student receives any funds for living expenses. The cost of this program varies. Students are required to pay a non-refundable out of pocket deposit by program orientation.

PHLEBOTOMY CERTIFICATE

Students who successfully complete all Phlebotomy Certificate program requirements will be able to:

- Perform successful venipuncture draws with proper technique using a vacutainer.
- Perform a successful venipuncture draws with proper technique using a syringe.
- Perform a successful fingersticks with the proper technique.
- Perform a successful heel stick with the proper technique.
- Demonstrate effective communication with patients, family members, and colleagues using verbal, written, and information technology tools/devices.

PROGRAM COURSE REQUIREMENTS

For information on the advised sequence of program courses, see the Phlebotomy Certificate Program Map.

Program Courses

PBT 100	Phlebotomy	6
PBT 101	Phlebotomy Law & Ethics	2
PBT 102	Phlebotomy Medical Terminology	1
PBT 103	Communication and Documentation in Phlebotomy	1
PBT 104	Advanced Phlebotomy Skills	1
PBT 111	Lab Operations in Phlebotomy	5
PBT 112	Job Success & Professionalism for Phlebotomy	1
PBT 120	Anatomy & Physiology For Phlebotomy	3
PBT 190	Phlebotomy Practicum	5

Total Credit Hours: 25

Professional Business

https://www.linnbenton.edu/future-students/explore-lb/programs/business-administration.php

The Professional Business Certificate program is a comprehensive and accelerated pathway to gaining essential business knowledge and skills. Designed for individuals eager to develop a competitive edge in the professional world, this program offers a dynamic and holistic curriculum that covers key aspects of business management, strategy, and leadership. Program for professionals who want to gain a competitive advantage, increase their value within their organization, and build their personal brand. Entrepreneurs can grow their seedling ideas into fully fledged businesses.

PROFESSIONAL BUSINESS CERTIFICATE

Students who successfully complete all Professional Business Certificate requirements will be able to:

- Explain the main functional areas of business, including accounting, finance, human resources, management and leadership, and marketing.
- Use appropriate mathematical structures and processes to make decisions and solve problems in the contexts of logical reasoning, probability, data, statistics, and financial mathematics.
- Demonstrate effective use of business marketing tools necessary to execute a marketing plan for a client, including social media.
- Identify trends and new developments in business and employ soft skills and marketing techniques to adapt to market demands.
- Develop a business plan that includes both conceptual and technical components.
- Analyze issues relating to inventory, receivables, long-lived assets, liabilities and stockholders' equity and recommend appropriate accounting treatment.
- Use the budgeting process to prepare budgets and pro forma financial statements.
- Identify the role of information systems in business processes; e.g., recognize and specify where information technology can be applied; recognize the role of Enterprise Resource Planning (ERP) systems.

PROGRAM COURSE REQUIREMENTS

For information on the advised sequence of program courses, see the Professional Business Certificate Program Map.

Program Courses

BA 101Z	Introduction to Business	4
BA 169Z	Data Analysis Using Microsoft Excel	4
BA 211Z	Principles of Financial Accounting	4
BA 213Z	Principles of Managerial Accounting	4
BA 223	Principles of Marketing	4
BA 260	Entrepreneurship & Sm Business	4
BA 285	Organizational Behavior	4
	or	
BA 224	Human Resource Management	3
	or	
PSY 201Z	Introduction to Psychology I	4
BA 291	Business Process Management	4
COMM 111Z	Public Speaking	4
MTH 105Z	Math in Society	4
	or	
MTH 075	Variables and Linear Equations	4
	or	
MTH 111Z	Precalculus I: Functions or higher	4

Students intending to continue on to the Business Management emphasis, Associate of Science should complete MTH 075 or MTH 111Z (p. 181). Students who do not intend to continue beyond this certificate should complete MTH 105Z (p. 181). Speak with an advisor for more information.

Total Credit Hours: 39-40

Surgical Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/surgical-technologist.php

The Surgical Technology program is a two year program consisting of 91 credits that prepares students to work in the operating room as an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The program prepares students to sit for the National CST exam, which allows them to work anywhere in the United States.

The Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

The program is structured as face-to-face or hybrid with in-person skills labs at LBCC's Healthcare Occupations Center (HOC) in Lebanon. A 360+ hour practicum work experience and 120+ cases are part of the training. The practicum takes place at area hospitals and clinics. Students are responsible for transportation to and from practicum sites.

Admission Requirements

LBCC's heathcare-related programs have limited enrollment and special application deadlines. Students should review the Surgical Technology application guide on the Surgical Technologist webpage for detailed application and admissions information.

Prior to admission, applicants are required to:

- Complete the online information session.
- Complete BI 231 Anatomy & Physiology I with a grade of C or better within the last 5 years.
- Complete WR 121Z Composition I or equivalent course with a grade of C or better within the last 5 years.
- Complete MTH 075 Variable and Linear Equations or equivalent course with a grade of C or better within the last 5 years.
- Be in good academic and financial standing at LBCC in order to be admitted to this program.

Post-admission and prior to the start of classes, students are required to:

- Have current immunizations.
- Complete American Heart Association CPR for Healthcare providers.
- Pass a criminal background check and drug screening.
- Submit supplemental application materials located in Program Bulletin.

The program is eligible for Financial Aid, but be aware that Financial aid will be used to pay the total amount of the program cost first before the student receives any funds for living expenses.
Students are required to pay a non-refundable out of pocket deposit by program orientation.

SURGICAL TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Surgical Technology, Associates of Applied Science degree requirements will be able to:

- Demonstrate competence in the technological aspects of the surgical technologist profession.
- Provide surgical patient care and comfort with empathy and cultural competence.
- Demonstrate competence in surgical technologist duties, procedures and cases.
- Demonstrate effective communication with patients, family members, and colleagues using verbal, written, and information technology tools/devices.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Surgical Technology, Associate of Applied Science Program Map.*

Pre-Application Courses

The Surgical Technology application guide can be found on the Surgical Technologist webpage and includes detailed application and admissions information. All pre-application courses must be completed with a grade of C or higher prior to admission to the program.

BI 231	Human Anatomy & Physiology	5
MTH 075	Variables and Linear Equations	4
WR 121Z	Composition I	4

MTH 075 or higher: Satisfies the AAS related instruction Computation requirement.

WR 121Z (p. 215)*: Satisfies the AAS related instruction Communication requirement.*

Program Courses

BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
BI 234	Microbiology	4
COMM 218Z	Interpersonal Communication	4
CRS 130	General Medical Terminology	3
PSY 201Z	Introduction to Psychology I	4
ST 111	Introduction to Surgical Theory	4
ST 112	Surgical Technology Theory II	4
	or	
ST 105	Sterile Processing	5
ST 113	Surgical Technology Theory III	4
ST 114	Surgical Technology Theory IV	4
ST 216	Surgical Technologist Certification and Job Success	1
ST 210	Surgical Technology- General and Pediatric Surgery	4
ST 211	Surgical Technology- Obstetric, Gynecologic, and Genitourinary Surgery	4
ST 212	Surgical Technology- Orthopedic Surgery	4
ST 213	Surgical Technology- Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery	4
ST 214	Surgical Technology- Ophthalmologic and Neurosurgery	4
ST 215	Surgical Technology- Thoracic, Cardiovascular and Vascular Surgery	4
ST 230	Surgical Technology Clinical Practicum I	6
ST 231	Surgical Technology Clinical Practicum II	6

PSY 201Z (p. 205)*: Satisfies the AAS related instruction Human Relations requirement.*

Students with prior Surgical Technology certification may be elegible to receive LBCC credit. See Credit for Prior Learning webpage for more information.

Total Credit Hours: 91-92

Visual Communication

https://www.linnbenton.edu/future-students/explore-lb/programs/visual-arts.php

The Visual Communications department is dedicated to training students for entry-level positions within the visual communications industry. Graphic Designers are responsible for much of what we see around us. Graphic design includes packaging, logos, brochures, publications, corporate identities, and more. They are integral in creating the "branding" of a corporation or product/service. Designers must work to master the Adobe applications and upon completion of the first year courses, students should be able to pass the Adobe Certified Expert certification tests. The curriculum provides learning experiences utilizing the latest industry-standard imaging software applications. Projects and Studio coursework provide opportunities for students to deal with clients and to accept responsibility for deadlines and quality control. Graduates assemble a comprehensive portfolio. Employment opportunities are found in a wide range of settings: print shops, web design studios, as a member of a support team in advertising, graphic design, or in-house design groups. The Digital Imaging/Prepress Technology One-Year Certificate comprises the first year of studies for the Visual Communication, Associate of Applied Science (AAS) degree.

Facilities

The Visual Communications facilities include one graphic design and one digital imaging computer laboratory. There is a fully equipped, modern screen printing lab onsite. Equipment similar to what is found in the offices of printers, designers, illustrators and publishers throughout the country are available. The facilities also include graphic design and fine art studios as well as display galleries for presenting student work and the work of other designers and artists. Facilities are handicapped accessible.

VISUAL COMMUNICATION, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Visual Communication, Associate of Applied Science degree requirements will be able to:

- Demonstrate analytical problem solving in the development and implementation of effective visual communication.
- Cultivate and apply creativity through free association, brainstorming, the group process, and original research.
- Demonstrate appropriate behavior in giving and/or receiving constructive criticism and remain flexible to make the necessary changes.

- Integrate awareness of personal strengths and limitations with significant historic and current design trends, attitudes and values in developing effective visual communication.
- Contribute successfully to the group process by being a team player, maintaining accessibility, remaining involved, and demonstrating reliability.
- Develop and apply technical competencies necessary for employment in the Graphic Arts or Web/Media industries.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Visual Communication, Associate of Applied Science Program Map.*

Computation		
BA 218	Personal Finance Planning	3
Communication		
COMM 111Z	Public Speaking	4
	or	
WR 121Z	Composition I	4
Human Relations		
ART 204	History of Western Art	3
	or	
ART 205	History Of Western Art	3
	or	
ART 206	History of Western Art	3
	or	
ART 207	Indigenous Art Of The Americas	3
Program Courses		
AA 156	Foundation Digital Page Layout	4
AA 161	Web Design Basics	3
AA 162	Web Design II	3
AA 174	Screen Printing	4
AA 193	Digital Image Processes III	4
AA 195	Web Coding Basics	3
AA 200	Design Studio	2
	or	
AA 280	CWE GRAPHICS	1 TO 12
AA 221	Graphic Design I	4
AA 222	Graphic Design II	4
AA 223	Graphic Design III	4
AA 224	Typographical Design I	4
AA 225	Packaging and 3D Design	3
AA 226	Typographic Design II	4
AA 228	Portfolio & Professional Practices	4
AA 237	Illustration I	4
AA 260	User Interface Design & User Experience	3
AA 275	Video & Multimedia	2
ART 115	Basic Design I: Composition	4
ART 120	Foundations in Digital Imaging Processes	4
ART 121	Computers in Visual Arts	4
ART 131	Drawing I	4
ART 263	Digital Photography	4
BA 223	Principles of Marketing	4

If taking AA 280 Cooperative Work Experience (CWE), students need to take a minimum of **2 credits**.

Total Credit Hours: 93

DIGITAL IMAGING AND PREPRESS TECHNOLOGY, ONE-YEAR CERTIFICATE

Students who successfully complete all Digital Imaging/Prepress Technology, One-year Certificate program requirements will be able to:

- Develop and apply technical competencies necessary for employment in the prepress and printing industry.
- Demonstrate analytical problem solving in the planning and production of files and/or mechanicals for print/reproduction.
- Demonstrate appropriate behavior in giving and/or receiving constructive criticism, including making necessary changes.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Digital Imaging & Prepress Technology, One-year Certificate Program Map.*

Computation		
BA 218	Personal Finance Planning	3
Communication		
COMM 111Z	Public Speaking	4
	or	
WR 121Z	Composition I	4
Human Relations		
ART 204	History of Western Art	3
	or	
ART 205	History Of Western Art	3
	or	
ART 206	History of Western Art	3
	or	
ART 207	Indigenous Art Of The Americas	3
Program Courses		
AA 156	Foundation Digital Page Layout	4
AA 193	Digital Image Processes III	4

AA 224	Typographical Design I	4
ART 120	Foundations in Digital Imaging Processes	4
ART 115	Basic Design I: Composition	4
ART 121	Computers in Visual Arts	4
ART 131	Drawing I	4
ART 263	Digital Photography	4
BA 223	Principles of Marketing	4

Total Credit Hours: 46

Welding and Fabrication Technology

https://www.linnbenton.edu/future-students/explore-lb/programs/welding.php

Welding and fabrication can lead to a rewarding career for students who enjoy challenges and like to work with their hands. Welding is used in constructing ships, automobiles, bridges, buildings, aircraft equipment, and many other products. In the welding process, heat is used to fuse metal pieces together. Soldering and brazing are similar processes that are used on electronic and other small equipment.

Welding is a good fit for students who possess skills in mechanical ability, preciseness, and creativity. A welder/fabricator must be in good physical condition and be able to stand, stoop, kneel, and bend. Good eyesight, especially depth perception, is necessary. The ability to work as a team is a valuable asset, and a welder/fabricator must also have the initiative to work independently.

People already employed in welding or a related field may upgrade their skills by enrolling in classes offered by the Welding and Fabrication Technology Department. Welding I, Welding II, and Preparation for Certification classes offer students exposure to welding processes and practices. Advanced coursework to prepare for certification in pipe or plate welding is available with instructor permission. Testing is done by instructors with a CWI or through an independent agency.

It is recommended that students enter the Welding and Fabrication Technology program in Fall Term. Admission may be possible at other times, however, a full credit load cannot be guaranteed. See a Welding faculty advisor for details.

Program Requirements

The Welding and Fabrication Technology Department offers several options to prepare students for entry-level positions in welding, welding repair, welder/fabricator, industrial mechanics and pipefitter/welder; all of them provide training in welding procedures, print reading, fabrication and layout. Students wanting to enter the program should have basic math and high school-level reading skills. Interested students should consider an Associate of Applied Science degree or a One-year Certificate of Completion. *As many of the courses run in sequence, it is recommended that students enter the program Fall Term. Students who do not begin Fall Term should work with program faculty to design an education plan based on their point of entry that leads to successful completion within a reasonable timeline.*

Facilities

The IA Welding Shop and the IC Fabrication Shop are large, modern facilities with oxy-acetylene, SMAW, MIG and TIG stations. Other equipment includes plasma arc, Computer/Numerical Controlled plasma cutting, template cutting, shearing, bending, rolling, drilling, and rigging equipment. Classrooms are conveniently located next to the shops and audiovisual materials are available.

WELDING AND FABRICATION TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

Students who successfully complete all Welding and Fabrication Technology, Associate of Applied Science degree requirements will be able to:

- Follow safe practices.
- Demonstrate work ethic.
- Use welding processes and equipment.
- Interpret blueprints.
- Apply appropriate metallurgical principles.

Pipefitter Welder:

- Calculate and lay out common pipe fabrication.
- Read, synthesize and apply basic industry codes.
- Demonstrate basic pipe welding skills.

Industrial Mechanic (Millwright):

- Solve and repair industrial equipment.

Fabricator/Welder:

- Select correct materials and procedures to build projects.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Applied Science (p. 56) *degree. For information on the advised sequence of program courses, see the Welding*

and Fabrication Technology, Associate of Applied Science Program Map.

Communication

WLD 151	Technical Writing For Welders	3
	or	
IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing	3

WR 115 or higher will fulfill program requirements.

Computation

WLD 150	Math & Measurement For Welders	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Human Relations

WLD 152	Teamwork Skills For Welders	3
	or	
	Human Relations	3

See the Related Instruction Requirements section for a list of approved courses.

Program Courses

HE 110	First Aid and CPR	1
	or	
HE 112	Emergency First Aid	1
MA3. 396B	Manufacturing Processes I	2
NDT 100	Intro to Nondestructive Test	3
WLD 110	Basic Arc Welding	4
WLD 111	Intermediate Arc Welding	5
WLD 112	Advanced Arc Welding	5
WLD 120	Fab & Repair Practices I	4
WLD 121	Fab & Repair Practices II	4
WLD 122	Fab & Repair Practices III	4
WLD 130	Print Reading Applications	4
WLD 131	Interpret Metal/Fab Drawings	3
WLD 132	Layout Procedures for Sheet Metal and Pipe	4
WLD 133	CADD to CNC Processing	1
WLD 182	Career Planning & Interview Skills	1
WLD 220	Fabrication Practices IV	4
WLD 221	Fab & Repair Practices V	4
WLD 222	Fabrication Practices VI	4
WLD 230	Advanced Fab Techniques	3
WLD 231	Welding & Fabrication Capstone	4
WLD 232	Advanced Welding Techniques	2
WLD 240	Machinery Operation Maintenance	3
WLD 241	Basic Electricity & Fluid Power For Welders	3
WLD 250	Practical Metallurgy	3
WLD 251	Weld Inspection and Code	2
WLD 260	Intro To Pipe Welding	2
WE1. 2802	CWE Welding	1-12
	or	
WLD 281	Welding Seminar	1-10

Total Credit Hours: 90

WELDING AND FABRICATION TECHNOLOGY, ONE-YEAR CERTIFICATE

Students who successfully complete all Welding and Fabrication Technology, One-Year Certificate degree requirements will be able to:

- Follow safe practices.
- Demonstrate work ethic.
- Use welding processes and equipment.
- Interpret blueprints.
- Apply appropriate metallurgical principles.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for One-year Certificate (p. 56) *programs. For information on the advised sequence of program courses, see the Welding and Fabrication Technology, One-year Certificate Program Map.*

Communication

WLD 151	Technical Writing For Welders	3
	or	
IN4. 164	Technical Writing for CTE	3
	or	
WR 115	Intro to College Writing	3

WR 115 or higher will fulfill program requirements.

Computation

WLD 150	Math & Measurement For Welders	4
	or	
MTH 075	Variables and Linear Equations	4

MTH 075 or higher will fulfill program requirements.

Human Relations

WLD 152	Teamwork Skills For Welders	3
	or	
	Human Relations	3

See the Related Instruction Requirements section for a list of approved courses.

Program Courses

HE 110	First Aid and CPR	1
	or	
HE 112	Emergency First Aid	1
WLD 110	Basic Arc Welding	4
WLD 111	Intermediate Arc Welding	5
WLD 112	Advanced Arc Welding	5
WLD 120	Fab & Repair Practices I	4
WLD 121	Fab & Repair Practices II	4
WLD 122	Fab & Repair Practices III	4
WLD 130	Print Reading Applications	4
WLD 131	Interpret Metal/Fab Drawings	3
WLD 132	Layout Procedures for Sheet Metal and Pipe	4
WLD 133	CADD to CNC Processing	1
WLD 182	Career Planning & Interview Skills	1
WLD 260	Intro To Pipe Welding	2

Total Credit Hours: 52

Associate of Arts Oregon Transfer Degrees

The Associate of Arts Oregon Transfer (AAOT) two-year degree, generally offered without a designated major, is designed to satisfy the lower division general education requirements at Oregon's public university and is intended for students who plan to transfer to a four-year college or university and pursue a baccalaureate program. LBCC students who have earned an AAOT will have met the lower division transfer requirements of baccalaureate degree programs of any Oregon four-year public university and will be eligible for junior standing for the purposes of registration.

The AAOT is recognized at each Oregon four-year public university as meeting institutional lower division general education requirements but school, department, or major requirements with regard to program courses or GPA may not be satisfied. LBCC students should work with an advisor to align coursework with the their intended program of study and degree requirements of the institution to which the student plans to transfer. For information on advised sequencing of courses for a particular concentration, visit the program webpage to see if a program map is available.

For purposes of the Oregon state AAOT degree, no student with a disability shall be denied the degree or the benefits flowing there from with respect to admission and matriculation at a four-year public university because the student has been granted an academic adjustment or program modification in any course required for the AAOT degree. This provision includes course substitutions when granted as a disability accommodation in the manner prescribed by the student's community college. This provision may not necessarily apply to major specific course requirements or prerequisites.

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE REQUIREMENTS

To be awarded an AAOT degree, students must:

- Complete a minimum of 90 credits of college-level coursework. A maximum number of 24 non-traditional credits beyond any required by a given program can be used towards a degree. See the non-traditional credit section of this catalog for more information.
- Complete at least 12 credits at LBCC, 8 of which must meet overall degree requirements (can include Discipline Studies and electives). Note: Credits granted for prior learning cannot be applied to this requirement.
- Pass all courses with a grade of C or better.
- Have a minimum cumulative GPA of 2.0 at the time the AAOT degree is awarded.
- Complete a minimum of 70 percent of all credits attempted. Grades of "F," "NP," "IN" and "W" are non-completion grades. The maximum number of "P" credits allowed is 16. This limit does not include courses only offered P/NP.

General Education: Foundational Requirements Learning Outcomes

Listed below are the general education course areas for the AAOT degree. Specific courses that meet these requirements are listed in this catalog and are available from program advisors. No single course may be used to satisfy more than one subject area even though some courses have been approved in more than one area.

Writing & Information Literacy

Upon successful completion of the Writing sequence general education requirement, students will be able to:

- Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.
- Locate, evaluate, and ethically utilize information to communicate effectively.

- Demonstrate appropriate reasoning in response to complex issues.

Upon successful completion of the Information Literacy general education requirement, students will be able to:

- Formulate a problem statement.
- Determine the nature and extent of the information needed to address the problem.
- Access relevant information effectively and efficiently.
- Evaluate information and its source critically.
- Understand many of the economic, legal, and social issues surrounding the use of information.

Speech/Oral Communication

Upon successful completion of the Speech/Oral Communication general education requirement, students will be able to:

- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

Mathematics

Upon successful completion of the Mathematics general education requirement, students will be able to:

- Use appropriate mathematics to solve problems.
- Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

Health, Wellness, and Fitness

Upon successful completion of the Health, Wellness, and Fitness general education requirement, students will be able to:

- Recognize key determinants of health and wellness.
- Be able to design a comprehensive wellness program for physical fitness, nutrition, and/or stress management using a selected process of behavior change.
- Demonstrate an ability to evaluate or assess key indicators of health.
- Demonstrate appropriate reasoning in response to complex issues.

General Education: Discipline Studies Learning Outcomes

Arts & Letters

Upon successful completion of the Arts & Letters* general education requirement, students will be able to:

- Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.
- Critically analyze values and ethics within a range of human experience and expression to engage more fully in local and global issues.

*Arts & Letters refers to works of art, whether written, crafted, designed, or performed and documents of historical or cultural significance.

Social Sciences

Upon successful completion of the Social Sciences general education requirement, students will be able to:

- Apply analytical skills to social phenomena in order to understand human behavior.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

Science, Math, Computer Science

Upon successful completion of the Science, Math, Computer Science general education requirement, students will be able to:

- Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.
- Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically evaluate existing or alternative explanations, solve problems, and make evidence-based decisions in an ethical manner.
- Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

Cultural Literacy

Upon successful completion of the Cultural Literacy general education requirement, students will be able to:

- Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

Foreign Language

Students transferring to any Oregon public four-year institution must complete two terms (8 credits), or demonstrate equivalent proficiency in a foreign language prior to transferring. In addition, students who plan to earn a Bachelor's of Arts degree must complete a total of six terms (24 credits), or demonstrate equivalent proficiency, in a foreign language prior to graduating with their Bachelor's degree. Students interested in studying Spanish may complete these requirements at LBCC.

GENERAL EDUCATION: FOUNDATIONAL REQUIREMENTS

Writing (2 Courses)

A student must have at least eight credits of Writing.

WR 121Z	Composition I	4
	and	
WR 122Z	Composition II	4
	or	
WR 227Z	Technical Writing	4

Speech/ Oral Communication (1 Course)

COMM 111Z	Public Speaking	4
COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4

Mathematics (1 Course)

Take the following math course or higher level math course. The general education math course may not be used to meet the Science/Math/Computer Science requirement.

MTH 105Z	Math in Society	4

Health, Wellness And Fitness (3 Credits)

HE 225	Social Determinants of Health	4
HE 267	Wellness Coaching Fundamentals	3
PE 180	PE Activity Course	1
PE 185	PE Activity Course	1
PE 190	PE Activity Course	1
PE 231	Lifetime Health & Fitness	3

GENERAL EDUCATION: DISCIPLINE STUDIES

Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for cultural literacy. Designated courses are shown on the Cultural Literacy list below.

Arts And Letters

Three (3) courses chosen from two or more disciplines.

ART 102	Understanding Art	3
ART 115	Basic Design I: Composition	4
ART 117	Basic Design: 3-Dimensional	4
ART 131	Drawing I	4
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ART 207	Indigenous Art Of The Americas	3
ART 210	Women In Art	3
ART 263	Digital Photography	4
ED 224	Creative Drama for Teachers	3
ENG 104Z	Introduction to Fiction	4
ENG 106Z	Introduction to Poetry	4
ENG 145	Introduction to Film Studies, 1968-1999	3
ENG 201	Shakespeare	4
ENG 202	Shakespeare	4
ENG 204	British Literature: Early	4
ENG 205	British Literature: Middle	4
ENG 206	British Literature: Modern	4
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 221	Children's Literature	4
ENG 253	American Literature: Early	4
ENG 254	American Literature: Modern	4
ENG 257	African American Literature	4
ENG 261	Science Fiction	3
HUM 101	Humanities: Prehistory-Mid Ages	3
HUM 102	Humanities: Renaissance-Enlight	3
HUM 103	Hum: Romantic Era-Cont Society	3
JN 134	Intro to Photojournalism	3
JN 201	Media And Society	4
JN 216	News Reporting & Writing	3
JN 217	Feature Writing	3
MUS 101	Music Fundamentals	3
MUS 105	Introduction to Rock Music	3
MUS 106	History of Hip-Hop and Rap Music	3
MUS 107	History of Country Music	3
MUS 108	Music Cultures of the World	3
MUS 161	Music Appreciation	3
NMC 100	New Media and Culture	4
SPN 201	Second Year Spanish I	4
SPN 202	Second Year Spanish II	4
SPN 203	Second Year Spanish III	4
SPN 214	Spanish for Heritage Speakers I	4
SPN 215	Spanish for Heritage Speakers II	4
SPN 216	Spanish For Heritage Speakers III	4
WR 240	Creative Writing: Nonfiction	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3
WR 243	Creative Writing: Script Writing Workshop	3

Social Sciences

Four (4) courses chosen from two or more disciplines.

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
ANTH 232	Peoples of the World - North America	3
EC 115	Outline of Economics	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
EC 215	Economic Development in the U.S.	4
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
ED 216	Purpose/Structure/Function	3
ED 253	Learning Across The Lifespan	3
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
GEOG 203	World Reg Geography: Asia	3
GEOG 204	Wrld Reg Geo: Africa/Mid East	3
HDFS 200	Human Sexuality	3
HDFS 201	Contemporary Families in The U.S.	3
HDFS 225	Infant and Child Development	4
HDFS 229	School-Age Adolescent Development	4
HE 267	Wellness Coaching Fundamentals	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 157	Hist of Middle East & Africa	3
HST 158	History of Latin America	3
HST 159	History of Asia	3
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
PHL 201	Intro To Philosophy	3
PHL 202	Elementary Ethics	3
PS 201	Intro to American Politics/Government	3
PS 204	Intro To Comparative Politics	3
PS 205	Intro International Relations	3
PS 211	Peace And Conflict	3
PSY 101	Psychology and Human Relations	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 215	Intro Developmental Psychology	3
PSY 216	Social Psychology	3
PSY 219	Intro To Abnormal Psychology	3
R 102	Religions of the Western World	3
R 103	Religions of Eastern World	3
R 202	Intro to Religious Studies	3
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
SOC 206Z	Social Problems	4
SOC 222	Sociology of the Family	3
WS 223	Intro to Women, Gender, Sexuality Studies	3
WS 280	Global Women	3

Science/Math/Computer Science

Four (4) courses from at least two disciplines including at least three (3) laboratory courses in biological and/or physical science.

ANS 121	Animal Science	4
ANTH 240	Introduction to Biological Anthropology	4
BI 101	General Biology: Ecology and Biodiversity	4
BI 102	General Biology: Cell and Molecular Biology	4
BI 103	General Biology: Organismal Structure and Function	4
BI 221Z	Principles of Biology: Cells	5
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
BI 231	Human Anatomy & Physiology	5
BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
BI 234	Microbiology	4
CH 112	Chemistry for Health Occupations	5
CH 121	College Chemistry I	5
CH 122	College Chemistry II	5
CH 123	College Chemistry III	5
CH 201	Chemistry For Engineering Majors I	5
CH 202	Chemistry For Engineering Majors II	5
CH 221Z	General Chemistry I	4
CH 222Z	General Chemistry II	4
CH 223Z	General Chemistry III	4
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
FW 251	Prin Of Wildlife Conservation	3
G 101	Intro to Geology: Solid Earth	4
G 201	Physical Geology I	4
G 202	Physical Geology II	4
G 203	Historical Geology	4
GS 104	Physical Science: Principles Of Physics	4
GS 105	Physical Science: Principles of Chemistry	4
GS 106	Phy Sci: Prin of Earth Science	4
GS 108	Oceanography	4
MTH 105Z	Math in Society	4
MTH 111Z	Precalculus I: Functions	4

MTH 112Z	Precalculus II: Trigonometry	4
MTH 211	Fund Of Elementary Math I	4
MTH 212	Fund Of Elementary Math II	4
MTH 213	Fund Of Elementary Math III	4
MTH 231	Elements Of Discrete Math	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
MTH 245	Math For Bio, Mgmt, Soc Science	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
MTH 254	Multivariable Calculus	4
MTH 255	Vector Calculus	4
MTH 256	Applied Differential Equations	4
MTH 264	Introduction to Matrix Algebra	2
MTH 265	Introduction to Series	2
PH 104	Descriptive Astronomy	4
PH 201	General Physics	5
PH 202	General Physics	5
PH 203	General Physics	5
PH 211	General Physics With Calculus	5
PH 212	General Physics With Calculus	5
PH 213	General Physics With Calculus	5
STAT 243Z	Elementary Statistics I	4
STAT 265	Introduction to Statistics for Engineers	4

Laboratory classes include ANS 121, ANTH 240, BI 101, BI 102, BI 103, BI 200, BI 221Z (p. 133), BI 222Z (p. 133), BI 223Z (p. 133), BI 231, BI 232, BI 233, BI 234, CH 121, CH 122, CH 123, CH 201, CH 202, CH 221Z (p. 140), CH 222Z (p. 140), CH 223Z (p. 140), CH 241, CH 242, CH 243, G 101, G 201, G 202, G 203, GS 104, GS 105, GS 106, GS 108, PH 104, PH 201, PH 202, PH 203, PH 211, PH 212 and PH 213

Cultural Literacy

Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for cultural literacy. The following courses are designated as meeting the statewide criteria for the Cultural Literacy Requirement.

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
ANTH 232	Peoples of the World - North America	3
ANTH 240	Introduction to Biological Anthropology	4
ART 102	Understanding Art	3
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ART 207	Indigenous Art Of The Americas	3
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 257	African American Literature	4
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
GEOG 203	World Reg Geography: Asia	3
GEOG 204	Wrld Reg Geo: Africa/Mid East	3
HDFS 201	Contemporary Families in The U.S.	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 157	Hist of Middle East & Africa	3
HST 158	History of Latin America	3
HST 159	History of Asia	3
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
HUM 101	Humanities: Prehistory-Mid Ages	3
HUM 102	Humanities: Renaissance-Enlight	3
HUM 103	Hum: Romantic Era-Cont Society	3
MUS 105	Introduction to Rock Music	3
MUS 108	Music Cultures of the World	3
MUS 161	Music Appreciation	3
PHL 201	Intro To Philosophy	3
PHL 202	Elementary Ethics	3
PS 205	Intro International Relations	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 215	Intro Developmental Psychology	3
R 102	Religions of the Western World	3
R 103	Religions of Eastern World	3
R 202	Intro to Religious Studies	3
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
SOC 206Z	Social Problems	4
SOC 222	Sociology of the Family	3
SPN 201	Second Year Spanish I	4
SPN 202	Second Year Spanish II	4
SPN 203	Second Year Spanish III	4
SPN 214	Spanish for Heritage Speakers I	4
SPN 215	Spanish for Heritage Speakers II	4
SPN 216	Spanish For Heritage Speakers III	4
WS 223	Intro to Women, Gender, Sexuality Studies	3
WS 280	Global Women	3

Electives

Any college-level course that would bring total credits to 90 quarter hours including up to 12 credits of Career and Technical Education courses (part of an LBCC Career Technical Program).

Elementary Education

The Elementary Education, Associate of Arts Oregon Transfer (AAOT) meets a critical workforce need. It is designed for college students who are interested in gaining certification to teach elementary education in Oregon. This transfer degree prepares college students to enter Bachelor Degree programs in elementary education. Program courses prepare students to pass state required ORELA tests and to transfer to accredited colleges of education.

All requirements of the Elementary Education, AAOT listed in this catalog and per the statewide Elementary Education Major Transfer Map MOU must be followed in order for students to earn the designation of elementary education on their degree. Students should meet with an education advisor every term.

ELEMENTARY EDUCATION EMPHASIS, ASSOCIATE OF ARTS OREGON TRANSFER

Students who successfully complete all Elementary Education, Associate of Arts Oregon Transfer degree requirements will be able to:

- Apply critical thinking to analyze social issues necessary to support the function of public education.
- Describe culturally-responsive pedagogy and integration of social justice into a teaching philosophy.
- Identify the ethics and responsibilities necessary to obtain a professional license in the teaching field and clarify career confirmation.

PROGRAM COURSE REQUIREMENTS

See the graduation requirements for the Associate of Arts Oregon Transfer (p. 102) *degree. For information on the advised sequence of program courses, see the Elementary Education, Associate of Arts Oregon Transfer Program Map.*

General Education: Foundational Requirements

COMM 111Z	Public Speaking	4
MTH 211	Fund Of Elementary Math I	4
PE 231	Lifetime Health & Fitness	3
WR 121Z	Composition I	4
WR 122Z	Composition II	4
	Subtotal: 19	

General Education: Discipline Studies

ANTH 110	Introduction to Cultural Anthropology	3
BI 101	General Biology: Ecology and Biodiversity	4
ENG 104Z	Introduction to Fiction	4
	or	
ENG 106Z	Introduction to Poetry	4
ENG 221	Children's Literature	4
GS 106	Phy Sci: Prin of Earth Science	4
HST 201	US History: Origins to 1820	4
MTH 212	Fund Of Elementary Math II	4
PS 201	Intro to American Politics/Government	3
PSY 201Z	Introduction to Psychology I	4
	or	
PSY 202Z	Introduction to Psychology II	4
	Arts & Letters	3
	Lab Science/Math/Computer Science	4
	Subtotal: 41	

Program Courses

Students are advised to work with a faculty advisor about recommended elective courses and to learn about Oregon public university application processes.

ART 131	Drawing I	4
HST 202	US History: 1820-1920	4
MTH 213	Fund Of Elementary Math III	4
	Electives	2

Education Courses

Each Oregon public university will accept at least 3 out of the 5 required education courses as meeting major requirements.

ED 101A	Introduction to Education: Practicum and Seminar	3
ED 216	Purpose/Structure/Function	3
ED 219	Social Justice, Civil Rights & Multiculturalism in Education	3
ED 282	Working w/Child w/Special Need	3
HDFS 225	Infant and Child Development	4
	Subtotal: 30	

Total Credit Hours: 90

Note: MTH 211, MTH 212, MTH 213, ED 101A (p. 152), ED 216, ED 219, ED 282, ENG 221 and HDFS 225 must be completed with a grade of B or better. A grade of P in these courses cannot be applied to this degree.

ASSOCIATE OF GENERAL STUDIES DEGREE REQUIREMENTS

The Associate of General Studies (AGS) degree is intended to meet individual student needs using a variety of collegiate level courses to meet degree requirement. The AGS is awarded to LBCC students who complete a two-year curriculum which may include lower division transfer (LDT) and/or career and technical education (CTE)

courses. Students may earn an AGS degree in any area of study available at LBCC.

For students who are not pursuing specific transfer or CTE programs, the AGS degree provides an alternative to pursue a broad general education background and accomplish personal educational goals. It is important for students to work closely with an advisor in designing a course plan for this degree. Because of the flexibility of this degree, it may not fulfill requirements for transfer to four-year institutions.

To be awarded an AGS degree, students must:

- Complete 14 credits of general education requirements, 55 credits of general electives, and 21 credits of focused electives.
- Complete a minimum of 90 credits of college-level coursework.
- Complete at least 24 credits at LBCC. Note: Credits granted for prior learning cannot be applied to this requirement.
- Have a minimum cumulative GPA of 2.0 at the time the AGS degree is awarded.
- Complete a minimum of 70 percent of all credits attempted. Grades of “F,” “NP,” “IN” and “W” are non-completion grades. The maximum number of "P" credits allowed is 16. This limit does not include courses only offered P/NP.

GENERAL EDUCATION REQUIREMENTS

Writing/Composition (4 Credits)

WR 121Z	Composition I	4

You must pass WR 115 with a C or better or attain an appropriate score on the Placement Test to enroll in WR 121.

WR 121 or a higher level WR course can be taken to fulfill this requirement.

Communication (3 Credits)

COMM 100Z	Introduction to Communication	4
COMM 111Z	Public Speaking	4
COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4

Mathematics (4 Credits)

Take one MTH course MTH 075 or higher.

Health and Physical Education (3 Credits)

Select 3 credits. Only one activity course may be taken twice to meet general education requirements, and no more than two activity courses per quarter will count toward general education requirements.

AH 100	CPR: AHA Basic Life Support & First Aid for Healthcare Providers	1
HE 112	Emergency First Aid	1
HE 125	Occupational Safety and Health	3
HE 225	Social Determinants of Health	4
HE 252	First Aid	3
HE 261	Adult CPR/AED with Pediatric	1
PE 185	PE Activity Course	1
PE 231	Lifetime Health & Fitness	3

FOCUSED ELECTIVES

Choose Option 1 or Option 2. All focused elective courses must be collegiate-level (any course numbered 100 or higher).

Option 1 - focused exploration of Humanities/Arts, Social Science, and Math/Science.

Select 21 credits from the following categories with a minimum of 3 credits from each group. To determine if a course may be applied toward fulfilling these requirements for the Associate of General Studies degree, look for the proper designation in the courses (p. 114) section of this catalog.

The Humanities/Arts group:

Art, creative writing, foreign languages (200-level courses only), literature, music, philosophy, religion.

The Social Science group:

History, psychology, sociology, political science, anthropology, economics.

The Math/Science group:

Mathematics, animal science, biology, physical science, physics.

Option 2 - focused exploration in a Career and Technical area.

Select 21 credits of CTE courses. Work with a career and technical program advisor to select appropriate courses that are from an approved career and technical program.

GENERAL ELECTIVES

Select 55 general elective credits to bring program total to 90 credits. General electives may include any combination of lower division transfer (LDT) and/or career and technical education (CTE) courses. All general electives must be collegiate-level courses.

CORE TRANSFER MAP

The Core Transfer Map (CTM) is a grouping of eight courses that adds up to at least 30 credits. The CTM is a broad description of course requirements for students at any Oregon community college or public university. Students who have not yet declared a major and plan to transfer may take courses that fit these categories at any

Oregon community college and expect all courses to transfer and meet at least 30 credits of General Education requirements for a bachelor's degree at any Oregon public university.

Students should work closely with an academic advisor to ensure selection of appropriate course work. Upon transfer, students may be required to complete additional course work in General Education, or an academic major, that is specific to the receiving institution.

All courses must be completed with a grade of C or higher. Students must have a minimum cumulative GPA of 2.0 at the time the module is completed and are advised to take all courses for the CTM for a letter grade. Many colleges and universities have a limit on the number of Pass/Fail courses students can take.

REQUIRED COURSES

Writing

WR 121Z	Composition I	4

Mathematics (1 Course)

Select any 100-level or 200-level MTH course for which MTH 95 or MTH 98 is a prerequisite (4-5 credits)

Arts and Letters

Select two (2) courses from the General Education Arts & Letters (p. 104) list (6-8 credits)

Social Sciences

Select two (2) courses from the General Education Social Science (p. 104)s (p. 104) list (6-8 credits)

Natural Science

Select two (2) Science courses chosen from the General Education Math/Science/Computer Science (p. 105) list (8-10 credits; lab science courses ONLY)

Note: Science courses for non-majors do not qualify for students pursuing a STEM pathway.

Additional Requirements

Cultural Literacy: Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for Cultural Literacy (p. 106) (as indicated on the AAOT General Education: Discipline Studies List). This course can be one of the 6 required courses in Arts & Letters, Social Sciences, or Natural Sciences.

If the credit total for the above requirements is less than 30 credits, select a course of your choice from the General Education list.

OREGON TRANSFER MODULE

The Oregon Transfer Module (OTM) provides a one year (45 credit) curriculum for students who plan to transfer to an Oregon community college or university. The module allows students to complete 45 credits of general education foundation course work that is academically sound and will meet the admission standards of the receiving school. The OTM is not a certificate or degree. Completing the OTM allows students to seamlessly transfer 45 credits of general education requirements to any Oregon community college, Oregon public university, or participating independent college or university. The receiving institution may specify additional coursework that is required for a major or for degree requirements, or to make up the difference between the Transfer Module and the institution's total General Education requirements.

Students should work closely with an academic advisor to ensure selection of appropriate course work. Upon transfer, students may be required to complete additional course work in General Education, or an academic major, that is specific to the receiving institution. Students who transfer prior to the completion of the Oregon Transfer Module will have their courses individually evaluated by the receiving institution.

All courses must be completed with a grade of C or higher. Students must have a minimum cumulative GPA of 2.0 at the time the module is completed. Students are advised to take all courses for the OTM for a letter grade. Many colleges and universities have a limit on the number of Pass/Fail courses students can take.

GENERAL EDUCATION: FOUNDATIONAL REQUIREMENTS

Writing (2 Courses)

WR 121Z	Composition I	4
WR 122Z	Composition II	4
WR 123	English Composition: Research	4
WR 227Z	Technical Writing	4

Communication (1 Course)

COMM 111Z	Public Speaking	4
COMM 114	Argument and Critical Discourse	3
COMM 218Z	Interpersonal Communication	4

Mathematics (1 Course)

Take the following math course or higher level math course. The General Education math may not be used to meet the Math/Science/Computer Science requirement.

MTH 105Z	Math in Society	4

GENERAL EDUCATION: DISCIPLINES STUDIES

Arts and Letters

Select a minimum of three (3) courses.

ART 102	Understanding Art	3
ART 115	Basic Design I: Composition	4
ART 117	Basic Design: 3-Dimensional	4
ART 131	Drawing I	4
ART 204	History of Western Art	3
ART 205	History Of Western Art	3
ART 206	History of Western Art	3
ART 207	Indigenous Art Of The Americas	3
ART 210	Women In Art	3
ART 263	Digital Photography	4
ED 224	Creative Drama for Teachers	3
ENG 104Z	Introduction to Fiction	4
ENG 106Z	Introduction to Poetry	4
ENG 145	Introduction to Film Studies, 1968-1999	3
ENG 201	Shakespeare	4
ENG 202	Shakespeare	4
ENG 204	British Literature: Early	4
ENG 205	British Literature: Middle	4
ENG 206	British Literature: Modern	4
ENG 207	World Literature: Asia	4
ENG 208	World Literature: Africa	4
ENG 209	World Lit: Non-Western Lit of the Americas	4
ENG 215	Latina/o/x Literature	3
ENG 220	Difference, Power, and Oppression in American Literature	4
ENG 221	Children's Literature	4
ENG 253	American Literature: Early	4
ENG 254	American Literature: Modern	4
ENG 257	African American Literature	4
ENG 261	Science Fiction	3
HUM 101	Humanities: Prehistory-Mid Ages	3
HUM 102	Humanities: Renaissance-Enlight	3
HUM 103	Hum: Romantic Era-Cont Society	3
JN 134	Intro to Photojournalism	3
JN 201	Media And Society	4
JN 216	News Reporting & Writing	3
JN 217	Feature Writing	3
MUS 101	Music Fundamentals	3
MUS 105	Introduction to Rock Music	3
MUS 106	History of Hip-Hop and Rap Music	3
MUS 107	History of Country Music	3
MUS 108	Music Cultures of the World	3
MUS 161	Music Appreciation	3
NMC 100	New Media and Culture	4
SPN 201	Second Year Spanish I	4
SPN 202	Second Year Spanish II	4
SPN 203	Second Year Spanish III	4
SPN 214	Spanish for Heritage Speakers I	4
SPN 215	Spanish for Heritage Speakers II	4
SPN 216	Spanish For Heritage Speakers III	4
WR 240	Creative Writing: Nonfiction	3
WR 241	Creative Writing: Fiction	3
WR 242	Creative Writing: Poetry	3
WR 243	Creative Writing: Script Writing Workshop	3

Social Sciences

Select a minimum of three (3) courses.

ANTH 101	Introduction to Anthropology	3
ANTH 110	Introduction to Cultural Anthropology	3
ANTH 230	Introduction to Archaeology	3
ANTH 232	Peoples of the World - North America	3
ANTH 240	Introduction to Biological Anthropology	4
EC 115	Outline of Economics	4
EC 201Z	Principles of Microeconomics	4
EC 202Z	Principles of Macroeconomics	4
EC 215	Economic Development in the U.S.	4
EC 220	Contemporary U.S. Economic Issues: Discrimination	3
ED 216	Purpose/Structure/Function	3
ED 253	Learning Across The Lifespan	3
GEOG 202	Wrld Reg Geo: Latin Amer/Carib	3
GEOG 203	World Reg Geography: Asia	3
GEOG 204	Wrld Reg Geo: Africa/Mid East	3
HDFS 200	Human Sexuality	3
HDFS 201	Contemporary Families in The U.S.	3
HDFS 225	Infant and Child Development	4
HDFS 229	School-Age Adolescent Development	4
HE 267	Wellness Coaching Fundamentals	3
HST 101	History of Western Civ: Ancient World to 1000 AD	4
HST 102	History of Western Civ: 1000 to 1789	4
HST 103	History of Western Civ: 1789 to the Present	4
HST 157	Hist of Middle East & Africa	3
HST 158	History of Latin America	3
HST 159	History of Asia	3
HST 201	US History: Origins to 1820	4
HST 202	US History: 1820-1920	4
HST 203	US History: 1920- the Present	4
PHL 201	Intro To Philosophy	3
PHL 202	Elementary Ethics	3
PS 201	Intro to American Politics/Government	3
PS 204	Intro To Comparative Politics	3
PS 205	Intro International Relations	3
PS 211	Peace And Conflict	3
PSY 101	Psychology and Human Relations	3
PSY 201Z	Introduction to Psychology I	4
PSY 202Z	Introduction to Psychology II	4
PSY 215	Intro Developmental Psychology	3

PSY 216	Social Psychology	3
PSY 219	Intro To Abnormal Psychology	3
R 202	Intro to Religious Studies	3
R 102	Religions of the Western World	3
R 103	Religions of Eastern World	3
SOC 204Z	Introduction To Sociology	4
SOC 205Z	Social Change and Institutions	4
SOC 206Z	Social Problems	4
SOC 222	Sociology of the Family	3
WS 223	Intro to Women, Gender, Sexuality Studies	3
WS 280	Global Women	3

Science/Math/Computer Science

Select a minimum of three (3) courses including at least one biological or physical science course with a lab.

ANS 121	Animal Science	4
BI 101	General Biology: Ecology and Biodiversity	4
BI 102	General Biology: Cell and Molecular Biology	4
BI 103	General Biology: Organismal Structure and Function	4
BI 221Z	Principles of Biology: Cells	5
BI 222Z	Principles of Biology: Organisms	5
BI 223Z	Principles of Biology: Ecology and Evolution	5
BI 231	Human Anatomy & Physiology	5
BI 232	Human Anatomy & Physiology	5
BI 233	Human Anatomy & Physiology	5
BI 234	Microbiology	4
CH 112	Chemistry for Health Occupations	5
CH 221Z	General Chemistry I	4
CH 222Z	General Chemistry II	4
CH 223Z	General Chemistry III	4
CH 241	Organic Chemistry	4
CH 242	Organic Chemistry	4
CH 243	Organic Chemistry	4
FW 251	Prin Of Wildlife Conservation	3
G 101	Intro to Geology: Solid Earth	4
G 201	Physical Geology I	4
G 202	Physical Geology II	4
G 203	Historical Geology	4
GS 104	Physical Science: Principles Of Physics	4
GS 105	Physical Science: Principles of Chemistry	4
GS 106	Phy Sci: Prin of Earth Science	4
GS 108	Oceanography	4
MTH 105Z	Math in Society	4
MTH 111Z	Precalculus I: Functions	4
MTH 112Z	Precalculus II: Trigonometry	4
MTH 211	Fund Of Elementary Math I	4
MTH 212	Fund Of Elementary Math II	4
MTH 213	Fund Of Elementary Math III	4
MTH 231	Elements Of Discrete Math	4
MTH 241	Calculus For Bio/Mgmnt/Soc Sci	4
MTH 245	Math For Bio, Mgmt, Soc Science	4
MTH 251Z	Differential Calculus	4
MTH 252Z	Integral Calculus	4
MTH 254	Multivariable Calculus	4
MTH 255	Vector Calculus	4
MTH 256	Applied Differential Equations	4
MTH 264	Introduction to Matrix Algebra	2
MTH 265	Introduction to Series	2
PH 104	Descriptive Astronomy	4
PH 201	General Physics	5
PH 202	General Physics	5
PH 203	General Physics	5
PH 211	General Physics With Calculus	5
PH 212	General Physics With Calculus	5
PH 213	General Physics With Calculus	5
STAT 243Z	Elementary Statistics I	4
STAT 265	Introduction to Statistics for Engineers	4

Laboratory classes include ANS 121, BI 101 BI 102, BI 103, BI 200, BI 221, BI 222, BI 223, BI 231, BI 232, BI 233, BI 234, CH 221, CH 222, CH 223, CH 241, CH 242, CH 243, G 101, G 102, G 103, G 201, G 202, G 203, GS 104, GS 105, GS 106, GS 108, PH 104, PH 201, PH 202, PH 203, PH 211, PH 212, PH 213

Additional courses for a total of 45 credits.

Non-Credit Training Certificates

Non-credit Training Certificates (NCTCs) provide documentation of skill attainment in a variety of industries. Each certificate is made up of either a single noncredit course or a group of noncredit courses and is between 18 and 210 hours in length. **No college credit is granted for completion of an NCTC.** Each NCTC requires at least one assessment of measurable outcomes or mastery of learning or knowledge.

JATC PIPE WELDING APPRENTICESHIP RELATED TRAINING, NON-CREDIT TRAINING CERTIFICATES

https://www.linnbenton.edu/current-students/apprenticeships/index.php

The JATC Pipe Welding Apprenticeship Related Training certificates fulfill the Joint Apprenticeship Training Committee (JATC) requirements for related instruction for the JATC Pipe Welding Apprenticeship. This training is divided into four years, with each year certifying 144

required hours of instruction over two terms. Each year is awarded separately.

REQUIREMENTS

Year 1

The apprenticeship pipefitting first year focuses on an introduction to the pipefitting craft, appropriate hand and power tools, oxyfuel cutting, ladders and scaffolds, and an introduction to motorized equipment such as generators, compressors, forklifts, and backhoes. The curriculum is provided through 2-terms of instruction that is trade specific to the Mid-Valley Steamfitter/Pipefitter JATC requirements.

Students who successfully complete all requirements will be able to:

- Identify and describe common pipefitting hand and power tools and their safe use.
- Identify various types of ladders and scaffolds and describe how to safely use them.
- Identify and describe specific types of motorized equipment found in the pipefitting environment and state general safety precautions for their use.
- Identify and describe oxyfuel cutting equipment and consumables and how to safely perform tasks using this process.

NCWD 101	JATC Pipe Welding Apprenticeship Year 1	72 Hours
NCWD 102	JATC Pipe Welding Apprenticeship Year 1	72 Hours

Year 2

The apprenticeship pipefitting second year focuses on piping systems, drawings and detail sheets, valve identification and installation, introductory trade math, threaded pipe fabrication, socket weld and butt-weld pipe fabrication and excavations. The curriculum is provided through 2-terms of instruction that is trade specific to the Mid-Valley Steamfitter/Pipefitter JATC requirements.

Students who successfully complete all requirements will be able to:

- Identify and describe various piping systems and their applications.
- Identify, describe, read, and interpret the use of drawings and detail sheets in the pipefitting environment.
- Identify and describe various valves used in pipefitting.
- Identify and describe threaded-pipe, socket welded. and butt welded materials and fittings.
- Identify and describe safety hazards, equipment, and techniques for working around trenches.
- Identify basic underground pipe installation guidelines and describe the different piping materials used in underground applications.

NCWD 201	JATC Pipe Welding Apprenticeship Year 2	72 Hours
NCWD 202	JATC Pipe Welding Apprenticeship Year 2	72 Hours

Year 3

The apprenticeship pipefitting third year focuses on rigging practices, standards and specifications including identifying materials and how to use them, advanced trade math including geometry, trigonometry, and algebraic formulas specific to the trade, motorized equipment, above ground pipe installation, field routing and vessel trim, pipe hangers and supports, and testing piping systems and equipment. The curriculum is provided through 2-terms of instruction that is trade specific to the Mid-Valley Steamfitter/Pipefitter JATC requirements.

Students who successfully complete all requirements will be able to:

- Identify and describe various types of rigging slings, hardware, and equipment.
- Understand state standards and codes relevant to pipefitting and their importance to the craft.
- Identify and describe specific types of motorized equipment found in the pipefitting environment and state general safety precautions for their use.
- Identify basic above-ground pipe installation guidelines and describe the different piping materials used in underground applications.
- Explain how to prepare to install and assemble a field piping run.
- Understand the methods used to suspend and support pipe and the standards used to communicate the designed methods to the pipefitter.
- Explain how to visually inspect pipe welds and how to perform various pressure tests.

NCWD 301	JATC Pipe Welding Apprenticeship	72

	Year 3	Hours
NCWD 302	JATC Pipe Welding Apprenticeship Year 3	72 Hours

Year 4

The apprenticeship pipefitting fourth year focuses on advanced blueprint reading and pipe fabrication, stress relieving and aligning, in-line specialties, special, piping, hot taps, maintaining valves, fundamentals of crew leadership, and related building code regulations. The curriculum is provided through 2-terms of instruction that is trade specific to the Mid-Valley Steamfitter/Pipefitter JATC requirements.

Students who successfully complete all requirements will be able to:

- Identify and describe specific contents of piping and instrumentation drawings, isometric drawings, and piping arrangement drawings.
- Explain how to calculate piping offsets, lay out and fabricate miter turns, fabricate saddle and supports, and lay out laterals.
- Describe thermal expansion in piping systems and how to minimize stress in pipe welds.
- Identify and describe the operation of various in-line specialties.
- Explain how to assemble special piping and hot tapping existing piping.
- Identify and describe how to maintain various valving systems.
- Identify and describe various aspects of crew leadership and safety responsibilities.

NCWD 401	JATC Pipe Welding Apprenticeship Year 4	72 Hours
NCWD 402	JATC Pipe Welding Apprenticeship Year 4	72 Hours

COURSES

AA - Applied Arts

AA 156 - Foundation Digital Page Layout (4)

The class is designed to teach students how to use InDesign For Page Layout. Documents will be produced using Adobe InDesign, students will learn to manipulate digital text and combine the text with other graphic elements. Students will study the traditional and current methods used to prepare layouts for printing. Learning and using the terminology used in the printing and graphics arts industry will be stressed. When producing digital mechanical files, emphasis will be placed on preparing files to the graphic arts industry standards. Student projects, notebooks, reading and exams will be required to complete the class.

AA 161 - Web Design Basics (3)
Introduces webpage design using industry standard software for the development of HTML based web sites. Explores site definition, page layout, graphic creation and optimization, and implementation of websites.

Prerequisite: Prerequisite: AA 195 Web Coding Basics with a grade of C or better.

AA 162 - Web Design II (3)
Expands upon web page design using industry standard software for the development of HTML based web sites. Covers security, hosting and web standards compliance. Explores site definition, page layout, graphic creation, understanding additional web languages, and more advanced implementation of web sites. Includes the implementation and use of content management software. Requires completion of an online portfolio.

Prerequisite: AA 161 with a grade of C or better.

AA 174 - Screen Printing (4)
Emphasizes paper stencil, drawing fluid, and photo emulsion processes. Exposes students to a range of techniques and concepts while making multiple color prints. Includes the safe use of chemicals and equipment used in the screen printing industry. Recommended: Some drawing background or ART 131 Drawing I, and experience with Adobe Illustrator.

AA 193 - Digital Image Processes III (4)
Culmination of the image manipulation sequence. Integrating the entire Adobe Design Creative Suite for creating color correct, printable images. Introduction of web optimization for images. Students will gain an in-depth understanding of vector illustration software and will learn to smoothly transition between applications depending upon current client needs. Introduces the basic concepts of 3-D illustration using modeling. Discusses career opportunities. Coursework will include preparation of a portfolio.

Prerequisite: Prerequisite: ART 121 Computers in Visual Arts and AA 156 Foundations in Digital Page Layout with a grade of C or better.

AA 195 - Web Coding Basics (3)
Introduces web coding through an examination of (X)HTML, CSS (Cascade Style Sheets) and relevant computer graphic file formats. AA 195 is intended as a first course in web coding for students in any major who might be interested in better understanding coding standards on the web. Students will design web pages that are accessible to multiple audiences and comply with modern standards. Required: Student should have a basic understanding of how to use a computer.

AA 198 - Independent Studies (1 TO 4)

Individual instruction in advanced problems relevant to the student's interests and needs. Required: instructor's approval. May be repeated for credit.

AA 200 - Design Studio (2)
Provides opportunity for students to work with clients on actual projects in a professional environment. Recommended: Students should have completed the first year of the Visual Communications program or have past design experience to participate in this course. May be repeated for a maximum of 8 credits.

AA 221 - Graphic Design I (4)
Introduction to graphic design. Examines visual communication through the application of the elements and principles of art. Studies static vs. dynamic, visual centering, design systems, metamorphosis and continuums. Instills critical analysis and good design judgment.

Prerequisite: Prerequisite: AA 193 Digital Image Processes III with a C or better.

AA 222 - Graphic Design II (4)
Studies corporate mark design; the development of symbols, logos, design programs and identity systems. Examines design adaptability, application, practicality, and integrity. Discusses environmental issues and stresses teamwork and interaction. Instills critical analysis, process, and good design judgment. Includes small group work teams and interactions with real world clients.

Prerequisite: AA 221 with a grade of C or better.

AA 223 - Graphic Design III (4)
Continues the study of corporate mark design; the development of symbols, logos, design programs, and identity systems. Further examines design adaptability, application, practicality, and integrity. Discusses environmental issues and stresses teamwork and interaction. Instills critical analysis, process, and good design judgment. Includes small group work teams and interactions with real world clients. Explores job opportunities and includes at least one visit to a design studio.

Prerequisite: AA 222 with a grade of C or better.

AA 224 - Typographical Design I (4)
Provides an introduction to letterforms. Develops a fundamental awareness of type and typographic design. Studies the evolution, art and vocabulary of typography, hand-built letterforms, and designing with type. Emphasizes typography as a working tool. Recommended: ART 115 Basic Design I: Composition and ART 120 Foundations in Digital Imaging Processes.

AA 225 - Packaging and 3D Design (3)
Introduces design, display and merchandising of 3-dimensional marketing solutions. Stresses suitability of concept, design and color as applied to various products. Explores the materials and methods of printing, cutting, folding and assembly for tactile and visual effect. Discusses environmental issues and safety in the workplace. Stresses good client designer relationships. Recommended: This is a design intensive course and designed for those who already have design experience or are in their second year of the Visual Communications program.

Prerequisite: AA193 with a grade of C or better.

AA 226 - Typographic Design II (4)
Continues the study, use and design of letterforms. Emphasizes creating original type variations and form manipulation.

Prerequisite: Prerequisite: AA 224 Typographical Design I; AA 193 Digital Image Processes III with a grade of C or better.

AA 228 - Portfolio & Professional Practices (4)
Emphasizes reevaluation of previously produced projects: organization and production of the business card, business stationery, resume, envelop, self-promotional and comprehensive portfolio. Covers current job opportunities; methods in merchandising job talents: action before, during and after the interview; and business practices and ethics. Students present their professional portfolios to the public at Portfolio Presentations and in a more personal setting at the reception that follows. Worksite safety and ergonomics will be covered during this course.

Prerequisite: Prerequisite: AA 222 Graphic Design II with a grade of C or better.

AA 237 - Illustration I (4)
Explores and develops skills in the use of various tools, materials, and techniques in illustration. Increases student awareness of illustrative possibilities and processes. Includes traditional illustration mediums along with the use of the computer.

Prerequisite: ART 121 with a grade of C or better.

AA 260 - User Interface Design & User Experience (3)
Explores the foundations, techniques, decision making, and real-world problem solving of user experience. Focuses on design based on a target user with work on research, flow, and prototyping. Includes usability testing.

AA 275 - Video & Multimedia (2)
This course is focused on understanding multimedia / motion. There will be a focus on understanding story-boarding and learning industry standard applications for multimedia creation.

Prerequisite: Prerequisite: ART 120 Foundations in Digital Imaging Processes with a grade of C or better.

AA 280 - CWE GRAPHICS (1 TO 12)

Gives students practical experience in supervised employment related to graphics. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE Faculty Coordinator's approval. May be repeated for a maximum of 24 credits.

AG8. - Agriculture

AG8. 130 - Pesticide Safety (3)

Covers background information in use of herbicides, insecticides, fungicides and other pesticides. Types of materials, safety in handling, storage and method of application are emphasized. Attention also is given to keeping current with changes in pesticide recordkeeping procedures.

AG8. 140 - Bioenergy Feedstock Production (3)

Students in this course are introduced to the feedstocks that are used in the production of biofuels, including temperate and tropical climate crops and grasses, wood resides, and animal wastes. The principles of sustainable agriculture and its implications to ecologically sound and socially responsible biofuel feedstock production are discussed. Also covered are options for on-farm biofuel manufacturing.

AG8. 141 - Principles Of Bioenergy (4)

Provides an overview of the biofuel industry, the major types of biofuels, and the implications of an emerging biofuel energy sector. The social, economical, and environmental sustainability of biofuel production are discussed throughout the course. Students will learn the various methods of manufacturing biofuels in the laboratory, on the farm and on a commercial scale. Fundamental concepts in biofuel engineering and biofuel chemistry are covered. Field trips include farm-scale and industrial biofuels operations in Oregon.

AG - Agriculture

AG 111 - Computers in Agriculture (3)
Agricultural examples and problems are utilized as a basis for the material in this course. Provides hands-on experience in the areas of word processing, spreadsheets, PowerPoint and Web site development.

AG 230A - Small Farm Management - Fall (2)

This course is the first in the AG 230 fall, winter, spring course series teaching the basic skills necessary to successfully manage a small farm. Students study in the classroom and practice on the LBCC farm how to grow local small farm crops, construct farm related wood objects, and operate hand and power equipment. Developing soft skills to successfully market LBCC farm products using a farm stand and a community supported agriculture program.

AG 230B - Small Farm Management - Winter (2)

This course is the second in the AG 230 fall, winter, spring course series teaching the basic skills necessary to successfully manage a small farm. Students study in the classroom and practice on the LBCC farm how to manage local farm crops and small animals, construct farm structures, and operate and maintain farm equipment. Students also practice various forms of direct marketing of farm products. Recommended: AG 230A Small Farm Managment - Fall.

AG 230C - Small Farm Management - Spring (3)

This course is the third in the AG 230 fall, winter, spring course series teaching the basic skills necessary to successfully manage a small farm. Students study in the classroom and practice on the LBCC farm how to manage local farm crops and small animals sustainably. Further practice in building farm structures, operating farm equipment, and marketing of farm products is included. In addition, small farm land acquisition and financing are discussed.

AG 250 - Irrigation System Design (3)

Designing drip, low pressure, and sprinkler irrigation systems with an emphasis in horticultural and field crop applications from pump to output nozzle.

AG 280A - CWE Agriculture (1 TO 12)

Designed to give students practical experience in supervised employment related to agriculture. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

AG 280B - CWE Animal Tech (1 TO 12)
Designed to give students practical experience in supervised employment related to animal technology. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on

identified objectives and number of hours worked. May be repeated for a maximum of 24 credits.

AG 280C - CWE Horticulture (1 TO 12)

Designed to give students practical experience in supervised employment related to horticulture. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

AH - Allied Health

AH 100 - CPR: AHA Basic Life Support & First Aid for Healthcare Providers (1)
Covers the American Heart Association (AHA) Healthcare Provider skills of CPR for adults, children, and infants along with Automated External Defibrillator (AED) instruction. Meets LBCC requirements for admission into various healthcare programs. Includes two parts: Basic Life Support (BLS) and First Aid. The BLS portion trains participants to promptly recognize several life-threatening emergencies, give high-quality chest compressions, deliver appropriate ventilation, and provide early use of an AED. The First Aid portion teaches students critical skills to respond to and manage an emergency in the first few minutes until emergency medical services arrives. Upon successful completion of this course, students will receive both a BLS and First Aid certification which is good for 2 years.

AH 111 - Medical Terminology I for Healthcare Providers (2)
Prepares students to use basic medical language in written and oral form to understand the basics of physicianäó»s diagnosis and treatment and to communicate with health care professionals. Abbreviations, pronunciation and spelling are emphasized.

AH 112 - Medical Terminology II for Healthcare Providers (2)
Prepares students to use basic medical language in written and oral form to understand the basics of physicianäó»s diagnosis and treatment and to communicate with health care professionals. Anatomical planes and regions, anatomy and physiology, diseases, disorders, and surgical procedures are emphasized.

Prerequisite: Prerequisite: AH 111 Medical Terminology I for Healthcare Providers with a grade of C or better.

ANS - Animal Science

ANS 121 - Animal Science (4)

Examines body systems of the food and fiber species and the interaction of these systems. Introduces the student to various phases of the livestock industry, including terminology, production practices, marketing and selection techniques. Students are expected to build communication skills through weekly lab reports and class presentations. Lab sessions are designed for hands-on experience with livestock. Emphasis is placed on the nutritional, reproductive and physical needs of the animals.

ANS 191 - Beginning Riding I (1)
Teaches the fundamentals of Western riding including safety, equipment, saddling, mounting, and the use of leg signals, balance, and reins. May be repeated for a maximum of 2 credits.

ANS 192 - Beginning Riding II (1)
Emphasizes and reinforces skills learned in Beginning Riding I. Polishing the use of aids, skilled movements with the horse, and proper seat position are stressed. May be repeated for a maximum of 2 credits.

ANS 207 - Careers in Animal Agriculture (1)

Explores career opportunities in animal science. Includes guest lecturers from various fields of animal agriculture as well as an emphasis on resume writing and job interviewing.

ANS 210 - Feeds and Feed Processing (4)

Covers basic animal nutrition, including digestive systems and nutrients. Studies methods of determining feed values, types of feed, feed characteristics, nutritional requirements and composition, methods of feeding and feed processing.

ANS 211 - Applied Animal Nutrition (3)

Introduces formulating and analyzing rations for livestock, balancing nutritional needs and choice of ingredients in relation to cost and suitability. Includes economics of livestock feeding and performance indicators.

Prerequisite: Prerequisite: ANS 210 Feeds & Feed Processing.

ANS 212 - Small Scale Sustainable Livestock Production (3)

Small scale livestock production is increasing in Oregon and the US. Poultry production in urban and suburban settings is especially popular. Local and state agencies across the US are revising regulations and codes to accommodate the small scale, part time and hobby farmers. Restaurants, food businesses, and consumers are increasingly looking for sustainably raised, local animal products. These trends are resulting in new business opportunities and the need for training of individuals in small scale animal husbandry.

ANS 215 - Beef/Dairy Industries (4)

Covers fundamentals of modern beef and dairy production, including cattle breeds, industry segments, nutrition, reproduction, diseases and parasites, marketing and current management practices. Herd improvement through Expected Progeny Differences (EPDs) and production testing is also covered.

ANS 216A - Applied Sheep Production (4)

Covers fundamentals of modern sheep production, including sheep breeds, industry segments, nutrition, reproduction, diseases and parasites, wool evaluation, marketing and modern management practices. Note: Course offered alternate years only.

Offered: Offered alternate years.

ANS 216B - Applied Swine Production (4)

Covers fundamentals of modern swine production, including swine breeds, marketing, reproduction, nutrition, production testing, diseases and parasites, production problems, and environmental concerns. Note: Course offered alternate years only.

Offered: Offered alternate years.

ANS 220 - Introductory Horse Science (4)

Basic course in commercial horse production and management. Covers breeds, breeding systems, physiology, nutrition, reproduction and diseases. Also develops basic skills in handling, foot care, feeding, selection and health management.

ANS 221 - Equine Conformation and Performance (2)

Teaches students practical skills in four specific areas of horse science: anatomy, foot and leg care, fitting and showing, and horse conformation judging and assessing conformation for performance. Recognizing common unsoundnesses and blemishes also is covered.

ANS 222 - Young Horse Training (2)

Provides hands-on training. The student is assigned a young horse to train for the term. The training consists of halter breaking, leading, sacking, longeing, trailer loading and handling the feet. Saddling, bitting, ground driving and early stages of riding are taught, as well as grooming, safety and use of equipment. Required: Students must pass a riding evaluation.

ANS 223 - Equine Marketing (2)

Introduces the practical concepts of equine marketing. Emphasizes assessing the market, targeting potential buyers, and preparing and presenting the product. Business law, as it relates to equine marketing, is discussed. Through practicing interviewing skills and writing a resume, students learn to market themselves.

ANS 227 - Artificial Insemination (4)

Includes instruction on reproductive organs, hormones, heat diagnosis, semen collection, insemination techniques, semen evaluation, pregnancy testing, freezing and dilution methods. Hands-on experience is stressed. Note: Recommended for second-year students.

ANS 231 - Livestock Evaluation (3)

Introduces criteria and principles in the physical evaluation of beef, sheep and swine. Emphasizes correctness of body type, relation of type to production, market standards, soundness and body parts. Extensive time is spent on applying techniques in evaluating live animals.

ANS 278 - Genetic Improvement: Livestock (3)
Introduces basic, practical concepts of improving livestock through a variety of genetic programs, including genetic possibilities, utilizing heritability for production gains, inbreeding coefficient, mating systems, genetic predictors and improvement programs.

Prerequisite: Recommended: MTH 075 Variable and Linear Equations with a grade of C or better.

ANTH - Anthropology

ANTH 101 - Introduction to Anthropology (3)
Introduces students to the basic concepts, theories, and methods of anthropology, including its four main sub-fields: archaeology, biological anthropology, cultural anthropology, and linguistic anthropology. Asks fundamental questions, including: What is culture? How do anthropologists study human populations, both past and present? How can this field help us better understand contemporary human problems?

ANTH 110 - Introduction to Cultural Anthropology (3)
Surveys the field of cultural anthropology and its focus studying human behavior and culture. Introduces a methodology for studying human sociocultural adaptations. Includes the topics of major cross-cultural studies with a focus on language, economics, marriage, kinship, gender, political organization, stratification, and spiritual belief systems. Examines traditional and contemporary practices, the processes of culture change, and the application of cultural anthropology to practical society problems.

ANTH 230 - Introduction to Archaeology (3)
Introduction to how the past is studied by archaeologists. The history of archaeology, archaeological theories, and archaeological methods will be discussed and explored in multiple contexts, emphasizing visual and hands-on learning.

ANTH 232 - Peoples of the World - North America (3)
Survey of peoples around the world. Early settlement, cultural history, ecological adaptations, population, family and gender roles, religious ideology, political and economic systems, modern social changes, and contemporary issues pertaining to indigenous peoples in culturally distinct regions of the world. Emphasis is placed on dispelling stereotypic images, both past and present.

ANTH 240 - Introduction to Biological Anthropology (4)
Introduces biological anthropology, a branch of anthropology that seeks to understand, from a biological point of view, what it means to be a human being. Provides the basics of the principles of genetics and inheritance, evolutionary theory, primate characteristics and behavior, the evolution of human and non-human primates through the fossil record as well as human diversity and adaptability by studying human biological and cultural evolution through an examination of hominin morphology, pre-human fossils, human variation, and cultural developments. Recommended: ANTH 101 or a basic understanding of human (or non-human) evolution.

ANTH 270 - Indigenous Anthropology (3)
Discusses critical perspectives of Indigenous people about anthropology theory, methods and effects of research on Indigenous peoples. Privileges Indigenous scholarship and perspectives in anthropology. Focuses on decolonizing discourse for a number of foundational issues. Involves the application of decolonized anthropological thought, methods and practice within Indigenous society.

ANTH 280 - CWE Anthropology/Archaeology (1 TO 12)

Gives students practical experience in supervised employment related to anthropology/archaeology. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

ANTH 283 - Introduction to Medical Anthropology (3)
Examines human health and healing systems from evolutionary and cross-cultural perspectives. Using a case study approach, explores individual- and population-level experiences of illness and healing, while providing the tools to evaluate global disease patterns and international health promotion and education programs.

APR - Apprenticeship

APR 101 - Intro Electricity/Circuit Comp (6)
Introductory electricity course, emphasizing electron theory, electrical terminology, magnetism, and electro-magnetism. Ohm's Law will be introduced and applied to series, parallel, and series-parallel circuits. A study of AC

circuits and the associated reactive components (capacitors and inductors) will necessitate an introduction to trigonometry and vector analysis.

APR 102 - AC Components and Uses (6)
Introduces students to the practical application of resistors, capacitors, inductors and transformers to AC electrical circuits. AC resonant circuits, including RL, RC, and RLC will be studied in both series and parallel configurations. The components involved with the distribution of AC power as well as lighting, heating and wiring applications will be covered. Students will learn troubleshooting skills and proper use of test equipment as they apply to AC circuits.

APR 103 - Elec Generator/Motors/Control (6)
Introduces students to AC and DC generators and alternators. The study of the theory, design and construction of both single-phase and three-phase generators and alternators is included. Students are also introduced to semiconductor control devices and PLC programming.

APR 110 - Essential Workplace Skills for Success (3)
Provides an opportunity to expand cross-cultural communication skills and knowledge and to put these skills into practice in diverse working environments of the 21st century. Covers essential workplace skills that are valued by employers such as teamwork, safety culture, and the willingness to learn new skills on the job.

APR 121 - Intro to Limited Energy Trade (4)
This is the first term of coursework designed for apprentices studying to become Limited Energy Technicians. Topics covered this term include an introduction to the limited energy trade, job site and tool safety, low-voltage cabling, craft-related mathematics, and conduit bending. Industry codes, standards and agencies will also be discussed.

APR 122 - Fund of Electricity & Electron (4)
This class is designed for apprentices working/studying to become Limited Energy Technicians, but is open to anyone desiring an introduction to Electricity and Electronics. Topics for this term include: Basic DC and AC Circuit analysis, Semiconductors, ICs and Digital Logic, Switching Devices, and Blueprint Reading. Using a DMM to safely test voltage, current and resistance will be emphasized. The National Electrical Code (NEC) as it relates to effective and safe implementation of low-voltage circuits will be introduced. Recommended: MTH 075 Variable and Linear Equations.

APR 123 - Electrical Test Equipment (4)
This class is designed for apprentices working/studying to become Limited Energy Technicians. Topics for this term include: Electrical Test Equipment, Power Quality, and Proper Grounding and Cable Termination. Effective and safe use of various trade-related test equipment as well as the National Electrical Code (NEC) requirements for safe grounding and cable termination will be emphasized. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 122 Fundamentals of Electricity and Electronics with a grade of "C" or better.

APR 151 - Welding I (2)
Stresses safety and equipment familiarization, with lab exercises for skill development in basic gas and electric arc welding. Includes technical information lectures in related subjects.

APR 152 - Welding II (2)
Provides welding skill level required in minor industrial applications. Includes more advanced electric arc-welding and an introduction to gas-shielded arc processes (MIG and TIG), as well as lab and technical information on related welding subjects.

APR 160 - Prep for Certification (1 to 2)
Allows the individual who has achieved sufficient welding skill proficiency to prepare for applicable ASW Plate Welder Qualification Tests and/or ASME Pipe Welder Qualification tests. Students may test during the course upon receiving instructor written permission based on instructor evaluation of student demonstrated welding skill level, welding technique, weld quality and consistency. Testing is performed by an independent testing agency.

APR 161 - Manufacturing Processes I (2)
This course provides training and learning experiences in basic machining operations. Students will be using the lathe, milling machine and other machine tools to complete a project. The finished projects are used to participate in a contest; judging is based on performance, craftsmanship and technology utilization. Students are required to demonstrate some design responsibilities. Skills for successful employment are emphasized.

APR 201 - Electric Motors (6)
Introduces students to various aspects of electric motors including types and applications, factors governing proper selection, effective protection and troubleshooting. Additional topics include hand bending of conduit, correct strapping and proper wire selection. Emphasis is on effective troubleshooting, including human relations and

customer service during maintenance, troubleshooting and repair.

Prerequisite: Recommended: MTH 075 Variable and Linear Equations.

APR 202 - Electric Motor Controls (6)
Provides an introduction to the design of control circuits and the electrical components that comprise these circuits. Students will design, troubleshoot and demonstrate a motor control training circuit in the context of a team environment. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 201 Electric Motors with a grade of "C" or better.

APR 208 - National Electrical Code I (6)
Designed for students preparing to take examinations based on The National Electrical Code (NEC). The NEC is the safety manual for electrical installation for the nation. The course will study sections of the NEC relating to wiring and protection and wiring methods and materials. Strategies for finding and applying information found in these sections to real life situations are emphasized.

APR 210 - National Electrical Code II (6)
Designed for students preparing to take examinations based on the National Electrical Code (NEC). The NEC is the safety manual for electrical installation for the nation. The course includes a comprehensive study of the sections of the NEC relating to Equipment for General Use and Special Occupancies. Strategies for finding and applying information found in these sections to real life situations are emphasized.

APR 212 - National Electrical Code III (6)
Designed for students preparing to take examinations based on the National Electrical Code (NEC). The NEC is the safety manual for electrical installation for the nation. The course includes a comprehensive study of the chapters of the NEC relating to Special Equipment, Special Conditions, Communication Systems and Tables. Strategies for finding and applying information found in these sections to real life situations is emphasized.

APR 214 - Programmable Logic Controllers (3)
Programmable logic controls are industrial computers used to control electrical and mechanical systems. This course is a hands-on introduction to Programmable Logic Controllers (PLCs) with emphasis given to effective selection, installation, and troubleshooting of PLC systems. PLC ladder logic programming will be introduced. Field troubleshooting of input and output devices will be covered.

APR 215 - Advanced PLC Troubleshooting (3)
Designed to develop advanced skills in programming PLCs. Students will learn to convertcommon industrial control circuits to PLC ladder logic as well as create programs from narrative descriptions. Special emphasis is placed on interfacing the PLC with a selection of electro-pneumatic control devices. Also covered are interpreting PLC data sheets and systemic approach to testing and troubleshooting of PLC programs.

Prerequisite: Prerequisite: APR 214 Programmable Logic Control or MT3.824 Programmable Logic Controllers with a C or better.

APR 216 - Industrial Pneumatic Systems (3)
Learn to analyze fundamental pneumatic schematics, how to troubleshoot common pneumatic problems, how to maintain and repair pneumatic systems used in a variety of production applications, and how to promote energy efficiency in pneumatic systems. Understanding pneumatic circuits is critical to working with all types of industrial control systems.

APR 217 - Process Control & Instrumentation (3)
Provides an introduction to process control and instrumentation. Students will develop a working production line that includes sensors, pneumatics, PLCs and motor controls. Energy efficiency and maintenance, troubleshooting, and repair of control systems is emphasized.

APR 221 - Specialized Systems (4)
Designed for the apprentice working/studying to become a licensed Limited Energy Technician. The wide range of topics covered in this class include: Specialty Transformers, Medical Systems, Sound and Signal Systems, and an introduction to both HVAC and Boiler systems. The National Electrical Code (NEC) requirements regarding the safe installation of each of these systems will be emphasized. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 122 Fundamentals of Electricity and Electronics with a grade of "C" or better.

APR 222 - Process Cont & Instrumentation (4)
Designed for the apprentice working/studying to become a licensed Limited Energy Technician. The topics covered in this course include: Instrumentation, Process Control and Distributed Control Systems. Emphasis will be placed on NEC/safety requirements as they relate to each of these systems. NEC practice exams will be administered during the last three weeks of the term. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 221 Specialized Systems with a grade of "C" or better.

APR 223 - Comm Systems & Networks (4)
Designed for the apprentice working/studying to become a licensed Limited Energy Technician. The topics covered in this course include: Cable Selection, Busses and Networks, Wireless Communication and an introduction to Site Survey and Job Planning. Application specific cable selection for safety, efficacy and code (NEC) requirements will be emphasized. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 222 Process Control and Instrumentation with a grade of "C" or better.

APR 224 - Protective Signaling (4)
Designed for the electrical apprentice working/studying to become a Class-A Limited Energy Technician. The topics covered in this course include: Fire Alarm Systems, Intrusion Detection Systems, Access Control and Nurse Call. The National Electrical Code (NEC) will be emphasized as it relates to the safe installation of each of these low voltage systems. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 223 Communication Systems and Networks with a grade of "C" or better.

APR 225 - Systems Integration (4)
Designed for the electrical apprentice working/studying to become a Class-A Limited Energy Technician. The topics covered in this course include: audio, closed circuit television (CCTV), Broadband Systems and Systems Integration. The National Electrical Code (NEC) will be emphasized as it relates to the safe installation of each of these low-voltage systems. NEC practice exams will be administered during the last two weeks of the term. Recommended: MTH 075 Variable and Linear Equations.

Prerequisite: Prerequisite: APR 224 Protective Signaling with a grade of "C" or better.

APR 251 - Safe Rigging Practices (3)
Provides a study of safe rigging principles, practices, and equipment. Topics of study include fiber and wire rope, block and tackle, lift and rigging chain, proof test, safe working load, design factor, sling geometry, fittings, and lifting and moving equipment.

APR 252 - Industrial Hydraulics I (3)
Provides a study of the basics of hydraulics used in the industrial manufacturing setting. Emphasis is on the components, circuit construction and the mathematical calculations used to compute pressure and force as it pertains to hydraulic equipment. Safety is stressed in each lesson. Required: APR 257 Math for Apprenticeship or equivalent.

APR 253 - Industrial Hydraulics II (4)
A continuation of the material introduced in Industrial Hydraulics I and covers the mechanics and design of hydraulic power systems. This course incorporates hands-on exercises with hydraulic trainers which cover the principals of pressure and force.

Prerequisite: Prerequisite: APR 252 Industrial Hydraulics I with a grade of C or better.

APR 255 - Introduction to Metallurgy (3)
Introduces the properties of various metals and their response to heating and cooling in the manufacturing setting. The metallurgy of welding is stressed with hands-on application to metal theory.

APR 256 - Electricity for Maintenance (4)
Provides a hands-on survey of electricity/electronics. Uses electrical troubleshooting theory in troubleshooting common electrical problems: low voltage, high voltage, unwanted resistance, open circuits, high resistance shorts to ground, and current and voltage unbalance. Covers efficiency technology and sustainable practices.

APR 257 - Math for Apprenticeship (5)
This course covers the mathematics needed for the industrial apprenticeship programs by emphasizing applications and problem-solving through studying basic operations with integers, exponents, algebraic expressions, linear equations, dimensional analysis, scientific notation, ratio and proportion, realistic percent problems, and an introduction to practical geometry and trigonometry.

APR 258 - Machinery Alignment (3)
Designed to give the student both theory and working knowledge for alignment of rotating equipment by using various methods and procedures. This course is applicable to all types of equipment alignment, from small pumps to large turbines.

APR 259 - Vibration Analysis And Equipment Reliability (3)
Vibration analysis of rotating machinery allows a trained technician to determine how well a piece of equipment is running during operation by the use of spectrum analysis. It is a non-invasive inspection technique to accurately determine if bearing or gear defects exist from the sound vibrations produced by machinery. The class will discuss the effects of motion and movement pertaining to reliable equipment operation by exploring how defects start in bearings and develop to the point of needing

replacement. Ways to reduce the effects of wear are a part of reliability.

Prerequisite: Prerequisite: APR 257 Math for Apprenticeship with a grade of C or better.

APR 260 - Pumps & Pumping (3)

Covers the components, operations and maintenance of centrifugal pumps. Nomenclature of pumps, pump hydraulics and the procedures used in the performance of routine maintenance activities are illustrated. Pump operating conditions and troubleshooting are also covered.

APR 261 - Natl Electrical Code: Expanded Exam Prep (3)
Designed for students who have met their electrical code class requirement but have not passed the state electrical code safety exam. The course continues the comprehensive study of the National Electrical Code (NEC). The NEC is the safety manual for electrical installation for the nation.

APR 262 - Pumps & Valves (2)
Learn to troubleshoot, maintain and repair industrial pumps and valves. Pump and valve selection is stressed as is print reading and correct installation. Emphasizes internet practical skills that lead to the efficient operation of valve and pumping systems.

APR 263 - Industrial Sensors & Actuators (3)
Provides working knowledge of a variety of industrial sensors and actuators and their operation in control systems. Explores how different types of sensors operate and how to select the appropriate sensors. Students learn to install, maintain, and troubleshoot different types of sensors and actuators. Includes the construction of electrical circuits that illustrate the function of various types of sensors.

APR 264 - Manufacturing Processes II (2)

This lecture/ lab course provides machine tool technology training and learning opportunities at an intermediate level. Instruction will be given in the safe and efficient operation of machine tools. Theory and practical considerations will be covered. Environmental awareness information is included in this course.

APR 265 - Manufacturing Processes III (2)
This lecture/lab course focuses on advanced machine tool operation. Determining machine tool selection, setup and planning for multi-tool projects will be covered. Shop math, including Trigonometry and Elementary Algebra will be used to make calculations. Students will complete a series of machining projects. This course includes instruction on basic Computer Numerical Control (CNC) machining and turning.

APR 268 - Basic Print Reading: Welders (3)
Introduces principles of welding fabrication drawings. Presents a visualization of parts and projects, dimensioning, and sketching to develop the skills necessary to function in the fabrication and repair fields as well as other related fields requiring knowledge of prints.

APR 270 - Automated Material Handling (3)
Provides an introduction to automation and production line technologies. Includes developing a working production line that includes sensor technology, electro-pneumatics, motor control technology, and programmed control. Emphasizes maintenance, troubleshooting, and repair of manufacturing systems as well as energy efficiency.

APR 274 - Drive Systems (2)
Explores the troubleshooting and maintenance of drive systems. Covers fundamentals of vibration analysis and system alignment in the lab component. Places emphasis on effective installation, removal, and maintenance of belt, chain and gear drives to maximize component lifecycle and energy efficiency.

APR 275 - Mechanical Systems (4)
Introduces students to fundamental mechanical skills, concepts, and practices. Intended for mechatronics technicians, this course includes precision measurement, technical shop math, mechanical fasteners, hand and power tools, and fundamentals of rigging and lifting. Emphasizes safe application of industrial skills in the workplace.

APR 276 - Bearings & Lube Systems (2)
Explores the troubleshooting and maintenance of bearings and lubrication systems. Includes training in fundamentals of vibration and oil analysis, handling and mounting bearings, and operating lubrication systems. Emphasizes energy efficiency.

APR 277 - Industrial Safety (2)
Covers how to protect oneself and co-workers from workplace accidents. Includes topics such as electrical safety, personal protective equipment, confined space entry, hazardous materials, material safety data sheet (MSDS), and blood borne pathogens. Emphasizes personal responsibility for one's own safety as well as the safety of others. All students create a personalized safety manual.

AREC - Agriculture Business Mgmt

AREC 211 - Management in Agriculture (4)

Covers agriculture as a business; the decision-making process; tools of decision making; acquiring, organizing and managing land, labor and capital resources; and reasons for success and failure. Students learn teamwork, cooperation and leadership skills through classroom simulation, group activities and assignments.

AREC 213 - Starting Ag/Hort Business (4)

An introduction to starting a business in agriculture or horticulture. Skills, models, decision making tools, and strategic alternatives analysis will be discussed and practiced using a number of different computer software programs. Students become familiar with business planning including business structure selection, market assessment, risk analysis and mitigation, financial and tax planning, and Federal programs and incentives. Resources for the entrepreneur are discussed. Agricultural and horticultural case studies and examples are emphasized. Recommended for second year student in the AAS and AS programs or prior Internet research and technical writing experience.

AREC 214 - Farm Direct Marketing (4)
This course covers basic principles of marketing agricultural products directly to consumers. Students learn how to develop and manage on-farm and online sales, farmers market stands and community supported agriculture (CSA) ventures. Case studies of local businesses are used for hands-on learning about real-world issues and opportunities. Recommended: AREC 213 Starting an Agriculture/Horticulture Business, AREC 221 Marketing in Agriculture.

AREC 221 - Marketing in Agriculture (3)

Covers all aspects of sales and marketing of agricultural products, including fruits and vegetables, cereal grains, milk and dairy products, commercial and purebred livestock. The commodities futures market and other specialized outlets also are included.

ART - Art

ART 102 - Understanding Art (3)
Surveys the basic elements of visual form. Examines traditional and contemporary visual arts from around the world in ways designed to provide a framework for meaningful responses to form and content.

ART 115 - Basic Design I: Composition (4)
Introduction to theory and studio practice in using the principles and elements of design to articulate visual ideas. Focus will be on concepts relating to 2-D design structure. Students will be exposed to art historical references as they relate to concepts as well as being encouraged to write and think critically about art and design. Emphasis will be on instilling sound foundational information in the traditional aspects of design as well as encouraging thoughtful exploration of contemporary design potential.

ART 117 - Basic Design: 3-Dimensional (4)
A beginning course in the principles of 3-dimensional design. Emphasis will be on design problem-solving in a variety of media. Studio work explores basic elements of space, planes, mass, texture. Fundamental course for students interested in fashion design, ceramics, sculpture, architecture and other more advanced media-oriented courses.

Prerequisite: Recommended: College level reading and writing skills and ART 115 Basic Design I: Composition strongly recommended.

ART 120 - Foundations in Digital Imaging Processes (4)
Introduces Adobe Photoshop and Adobe Illustrator for image manipulation and creation. Students will be introduced to tools used in both applications. Investigate capturing, processing and publishing for different digital image types. Projects will investigate various aspects of shapes, paths, points, fills and gradients. Emphasis will be placed on file management, printing and color management. Student projects, notebooks, reading and exams will be required to complete the class.

ART 121 - Computers in Visual Arts (4)
Advances understanding of Photoshop and Adobe Illustrator controls. Students will use both applications for drawing and page layout purposes for art, design and the web. Class work includes filters, styles, automation, modifying paths, placing and importing objects, modifying text, and manipulating layers. Student projects, a notebook, class discussion, reading and exams will be required to complete the class. Upon completion of this course students are be ready to take the Adobe Certified Associate Exam for both applications.

Prerequisite: Prerequisite: ART 120 Foundations in Digital Imaging Processes with a C or better.

ART 122 - Foundations in Motion 4-D (4)
Provides a foundational introduction to, and practice with, the aesthetics and history of video art and its correlations to other digital media. Explores the technical, theoretical, and conceptual facets of the digital video medium as a means of informing your own art-making process. Uses Photoshop and video editing software to compose along with digital singe-lens reflex (DSLR) cameras.

Prerequisite: ART 121 with a grade of C or better.

ART 131 - Drawing I (4)
Emphasizes the development of perceptual and technical skills needed to describe 3-D objects on 2-D surfaces. Exposes students to conceptual and technical art references and encourages students to think critically about art and expression as an integral part of learning to draw.

ART 132 - Drawing II (4)
Advanced study in the development of composition, drawing technique, and perceptual and technical skills. Exposes students to more challenging art processes and encourages students to think critically about art and expression as their practice regarding drawing is broadened.

Prerequisite: Recommended: ART 115 Basic Design I: Composition.

ART 154 - Ceramics I (4)

Introduces clay as an expressive material. Emphasis on throwing skills on the wheel with attention to form and function of pots. Clay, glaze and firing techniques included. Note: Offered only at the LBCC Benton Center, Corvallis Campus. May be repeated for a maximum of 8 credits.

ART 204 - History of Western Art (3)

Studies the history of Western visual art prehistory up to Middle Ages and its significance and relationship to humanity. Recommended: College-level reading and writing skills. Courses be taken in sequence, but not required.

ART 205 - History Of Western Art (3)

Studies the history of Western visual art of the Middle Ages, Renaissance and Baroque and its significance and relationship to humanity. (Recommended, but not required, that courses be taken in sequence).

Prerequisite: Recommended: College-level reading and writing skills. .

ART 206 - History of Western Art (3)

Studies the history of Western visual art of the 17th, 18th, 19th, 20th, and 21st centuries and its significance and relationship to humanity. Recommended: College-level reading and writing skills. Courses be taken in sequence, but not required.

ART 207 - Indigenous Art Of The Americas (3)

A historical survey of native arts of South, Central, and North America, including architecture, sculpture, painting, ceramics, textiles, basketry, and beadwork from prehistory to the present. Recommended but not required that courses be taken in sequence. Recommended: College-level reading and writing skills are strongly recommended for success in this course.

ART 210 - Women In Art (3)

Investigates the roles and status of women in art, with particular emphasis on the United States from 1930 to the present. Includes the representation of women in art; women's access to education, training, and exhibition opportunities; and public exposure as artists, collectors, organizers, and activists. While the focus will be on art and artists of the United States, these topics will be framed historically and examined within a global context.

Prerequisite: Prerequisite: WR 115 Introduction to College Writing with a C or better.

ART 234 - Figure Drawing (4)
An introductory course in contemporary figure drawing emphasizing conceptual approaches, observational drawing techniques, and the art historical context of drawing from life. Artists will explore the power structures that shape figurative art as part of our visual culture and think critically about their own studio practice. Students will create 2-3 artworks for a final group exhibition. This course can be repeated up to two times for credit. Required: Introductory experience in drawing. Recommended: ART 210 (p. 125) Women in Art. May be repeated for a maximum of 8 credits.

Prerequisite: Prerequisite: ART 131 Drawing I with a grade of "C" or better.

ART 254 - Ceramics II (4)

Provides instruction in clay construction for the experienced student, with advanced throwing and handbuilding, glazing and firing techniques. Note: Offered only at the LBCC Benton Center, Corvallis Campus. May be repeated for a maximum of 8 credits.

Prerequisite: Prerequisite: ART 154 Beginning Ceramics I with a grade of C or better.

ART 263 - Digital Photography (4)
Introduces digital imaging as an expressive medium. Covers the capture, editing and printing of photographic images in the digital environment, including scanning, image manipulation software, and photo quality output. Emphasis on technique, composition and creative expression. Computer lab work included. Recommended: ART 115 (p. 124) Basic Design I: Composition. May be repeated for a maximum of 8 credits.

ART 280 - CWE Fine Arts (1 TO 12)

An instructional program to give students experience in supervised employment related to fine arts. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

ART 281 - Painting (4)

Explores visual expression on a two-dimensional surface. Uses oil, acrylic or watercolor paints for spatial development of color, shape and surface. Drawing and design experience recommended. May be repeated for a maximum of 8 credits.

Prerequisite: Recommended: Drawing and design experience highly recommended.

AT - Animal Technology

AT 143 - Intro to Horse Management (2)

Presents facility and herd management techniques in detail. Students learn alternative training methods and are given tools to assess those methods.

AT 147 - Livestock Selection Techniques (4)

Introduces techniques on selection and comparative judging of beef, sheep, swine, and goats and developing oral reasons skills. Designed for first-year students interested in Livestock Judging Team participation.

AT 149 - Livestock Judging (4)

Provides an in depth application of selection and comparative judging of beef, sheep and swine and intensive work on developing oral reasons and industry terminology. Required: Instructor approval.

AT 153 - Livestock Events Practicum (2)

Offers students the opportunity to collaboratively plan and manage diverse agricultural associated events such as the Oregon Junior Livestock Expo, College Classic Livestock Judging Contest, and the Agricultural Sciences Awards event.

AT 154 - Equine Business Management (3)

Covers the basic concepts of equine business management. The decision-making process, tools of decision making, and types of business organization are covered. Organizing, acquiring and managing land, labor and capital resources are taught. Students learn teamwork, cooperation and leadership skills through classroom activities and assignments.

AT 155 - Equine Diseases and Parasites (3)

Covers the nature of equine diseases and parasites including common infectious and noninfectious diseases, diagnosis, treatment and prevention. Modern drugs and medications, immunology and basic microbiology are also included. Also covers common unsoundnesses of the foot and leg.

AT 156 - Livestock Disease & Parasites (3)
Covers the nature of livestock diseases caused by infectious and noninfectious organisms. Includes

nutritional, metabolic and chemical-related diseases as well as internal and external parasites. Emphasizes diagnosis, control, treatment and prevention of economically important diseases and conditions. Note: Course is offered alternate years only.

Offered: Alternate years.

AT 163 - Schooling the Horse I (3)

Provides hands-on horse training experience. Introduces the fundamentals of horse training, including longeing, working in the round pen, driving, bitting, riding, rein aids, and advanced lateral work. Introduces different arenas and facilities.

Prerequisite: Prerequisite: ANS 222 Young Horse Training with a grade of C or better.

AT 164 - Schooling The Horse II (3)

Provides hands-on horse training experience. The student learns the fundamentals of horse training, including advanced arena and trail work. Equipment, safety and horse psychology also are taught.

Prerequisite: Prerequisite: AT 163 Schooling the Horse I with a grade of C or better.

AT 248 - Advanced Livestock Selection (4)

Advanced course designed to provide mastery of livestock selection skills and oral reasons techniques for competitive livestock judges. Emphasizes advanced industry terminology and and genetic prediction data.

Prerequisite: Prerequisite: AT 147 Livestock Selection Techniques with a grade of C or better.

AT 263 - Schooling The Horse III (3)

Fundamental training techniques for horses are emphasized. Introduces reining, dressage and jumping.

Prerequisite: Prerequisite: AT 164 Schooling the Horse II with a grade of C or better.

AT 264 - Schooling The Horse Iv (3)

Advanced training techniques for horses are emphasized. Develops skill in reining, dressage and jumping.

Prerequisite: Prerequisite: AT 263 Schooling the Horse III with a grade of C or better.

AT 277A - Horse Breeding Management (2)

Familiarizes students with all aspects of reproductive management of the horse. Reproductive physiology, estrus cycles, breeding management, mare and foal care, stallion handling and recordkeeping are covered.

AT 277B - Horse Breeding Management Lab (2)

Exposes students to hands on aspects of breeding management including teasing, semen collection and processing, stallion handling, artificial insemination, foaling, foaling management and mare care.

Prerequisite: Prerequisite: AT 277A Horse Breeding Management with a grade of C or better.

AUT - Automotive Technology

AUT 290 - Math & Measurement for Transportation Technicians (4)
Focuses on numerical literacy, operations with whole numbers, fractions, decimals, proportions, ratios, algebraic expressions, practical geometry, and trigonometry. Emphasis is on the application of mathematics with realistic transportation technician examples. Explores the use of common measuring tools employed in transportation technician industries and examines the types of computation and problem-solving methods utilized in those industries.

AUT 295 - Manual Drivetrain & Axles (5)
In this class you add to the skills gained in first year automotive program courses by learning to repair, replace and troubleshoot manual transmissions and vehicle drive systems.

Prerequisite: Prerequisite: AUT 298 Advanced Engine Performance and AUT 299 Engine Repair with a grade of C or better.

AUT 296 - Advanced Steering, Suspension, Brakes and Advanced Drivers Assist Systems (ADAS) (6)
In this class you add to the skills already taught in Suspension, Steering and Braking Systems by learning to repair, replace and troubleshoot these advanced computerized systems known as Advanced Drivers Assist Systems or ADAS.

Prerequisite: Prerequisite: AUT 295 Manual Drivetrain & Axels and AUT 300 Auto Transmission & Transaxels with a grade of C or better. .

AUT 298 - Advanced Engine Performance (6)
In this class you add to the skills already taught in Electrical Systems and Engine Performance by learning to repair, replace and troubleshoot these advanced computerized systems along with related Emission controls. This course also includes 20 hours of advanced electrical troubleshooting techniques.

Prerequisite: Prerequisite: AUT 316 Maintenance & Light Repair, AUT 317 Electrical Systems & Engine Performance and AUT 319 Suspension, Steering & Braking with a grade of C or better.

AUT 299 - Engine Repair (5)
In this class you add to your first year automotive course skills by learning to repair, replace and troubleshoot engine related faults and failures.

Prerequisite: Prerequisite: AUT 316 Maintenance and Light Repair, AUT 317 Electrical Systems & Engine Performance and AUT 319 Suspension, Steering & Braking with a grade of C or better.

AUT 300 - Automatic Transmissions & Transaxles (6)
In this class you add to the skills gained during first year automotive program courses by learning to repair, replace and troubleshoot automatic transmission and transaxles.

Prerequisite: Prerequisite: AUT 298 Advanced Engine Performance and AUT 299 Engine Repair with a grade of C or better.

AUT 301 - Automotive Service and Repair Practice (1-2)
Automotive service and repair practices takes place at the Advanced Transportation Technology Center (ATTC) and the course is an attempt to simulate an automotive repair shop environment. Through practice on program vehicles as well as live public projects students will gain experience with the diagnosis and repair of vehicles. Students are responsible for following proper industry standards for safety and workmanship. Students are required to research repair process and labor times and set a goal to reach the professional flat-rate time standard. Doing so will challenge their use of tools, service literature, shop awareness and improve their growth towards professional automotive technicians. May be repeated for a maximum of 9 credits.

Prerequisite: Prerequisite: AUT 350 Shop Skills I and AUT 351 Shop Skills II with a grade of C or better.

AUT 303 - Auto Heating/Air Conditioning (5)
In this class you will learn to repair, replace and troubleshoot automotive climate control systems including computer controlled heating and cooling systems.

Prerequisite: Prerequisite: AUT 295 Manual Drivetrain & Axels and AUT 300 Auto Transmission & Transaxels with a grade of C or better.

AUT 315 - Vehicle Systems Diagnostics: Scanner and Scope (3)
Students will focus on the use of computerized automotive diagnostic equipment (Scanners and Lab Scopes) and their proper use in the vehicle diagnostic process. Students will practice with electronic repair database programs to interpret scan tool data, lab scope waveforms and computer system schematics.

Prerequisite: Prerequisite: AUT 317 Electrical Systems & Engine Performance with a grade of C or better.

AUT 316 - Maintenance & Light Repair (10)
Covers servicing the Engine-Transmissions drive train systems and the Heating Ventilation and Air Conditioning Systems. Introduces proper technique to repair gaskets, seals and fasteners. Emphasizes using vehicle specific electronic service information to recommend proper service intervals, replacement fluid types, capacities, specifications and procedures. Practices fluid, filter, belt, and hose replacement along with techniques to identify the source of leaking components. Includes operational theory for Engines, Manual and Automatic Transmissions, and HVAC systems.

Prerequisite: Prerequisite: AUT 317 Electical Systems & Engine Performance or AUT 319 Suspension, Steering & Braking with a grade of C or better.

AUT 317 - Electrical Sys & Engine Performance (10)
In this class you learn electrical, ignition and compression systems theory along with the use of electronic diagnostic equipment. You will learn to verify proper engine operation and emission controls and to service the starting, charging and secondary ignition systems.

AUT 319 - Suspension, Steering & Braking (10)
In this class you learn Suspension, Steering, and Braking systems theory for modern vehicles. You will certify on equipment commonly used in the Maintenance and Light Repair of these vehicle systems. You will learn alignment theory while practicing the pre alignment inspection of suspension and steering system components. You will gain experience servicing wheels, wheel bearings and tires. You will learn to evaluate, remove, replace and recondition brake, suspension and steering system components.

AUT 350 - Shop Skills I (3)
Teaches students to properly fill out work orders and obtain parts requisition information, and understand safe usage and proper selection of hand and electrical tools. Provides preparation to take certification tests offered by the National Coalition of Certification Centers (NC3), and vehicle manufacture industry recognized credentials. Required: Concurrent enrollment with AUT 317 Electrical Sys & Engine Performance or AUT 319 Suspension, Steering, Braking.

AUT 351 - Shop Skills II (3)
Teaches students proper and safe usage of common automotive pullers, presses, torch setup, basics of wire feed welding, and usage of plasma cutter. Provides preparation to take certification tests offered by the National Coalition of Certification Centers (NC3), and various vehicle manufacture industry credentials.

Prerequisite: Prerequisite: AUT 350 Shop Skills I with a grade of C or better.

AUT 643 - Customer Service for Auto Tech (3)
This course helps Automotive technicians to create effective troubleshooting methods that incorporate customer service skills coupled to communicating effectively with people from different social and cultural backgrounds. Included are job search skills for obtaining employment in the industry, as well as repair and design options that promote energy efficiency.

Prerequisite: Prerequisite: AUT 317 Electrical Systems & Engine Performance or AUT 316 Maintenance & Light Repair with a grade of C or better (may be taken concurrently).

BA - Business

BA 101Z - Introduction to Business (4)
Presents an integrated view of both established and entrepreneurial businesses by studying their common characteristics and processes in a global context. Introduces theory and develops basic skills in the areas of accounting, finance, management, and marketing, with an emphasis on social responsibility and ethical practices. Explores how businesses can create value for themselves and society by addressing environmental and social challenges.

BA 111 - Practical Accounting I (4)

Covers the fundamental principles of double-entry accounting, general journals and ledgers, business forms, simple financial statements and the completion of the accounting cycle. Emphasis on cash receipts and payments, payroll accounting, purchases and sales.

BA 112 - Practical Accounting II (4)

Continuing Practical Accounting I with explanation of the accounting cycle. Covers special journals, ledgers, business forms, including vouchers. Emphasizes accounting for partnerships.

Prerequisite: Prerequisite: BA 111 Practical Accounting I with a C or better.

BA 113 - Practical Accounting III (4)

Third course in Practical Accounting series. Includes entries requiring analysis and interpretation, unearned and accrued items, depreciation of assets, manufacturing accounting and other managerial accounting procedures.

Prerequisite: Prerequisite: BA 112 Practical Accounting II with a C or better.

BA 120 - Professional Accounting I (3)

Provides an advanced study of accounting theory and practice for measurement of income and valuation of assets in financial statement presentation. Reviews accounting concepts and alternative approaches to various problems.

Prerequisite: Prerequisite: BA 113 Practical Accounting III or BA 211Z Principles of Accounting: Financial and BA 213Z Principles of Accounting: Managerial with a C or better.

BA 121 - Professional Accounting II (3)

Provides an advanced study of accounting theory and practice for measurement of income and valuation of assets in financial statement presentation. Reviews accounting concepts and alternative approaches to various problems.

Prerequisite: Prerequisite: BA 113 Practical Accounting III or BA 211Z Principles of Accounting: Financial and BA 213Z Principles of Accounting: Managerial with a C or better.

BA 122 - Professional Accounting III (3)

Continues the Professional Accounting sequence. Emphasizes fund flow analysis, financial ratios, preparing

statements from incomplete data, correcting errors in prior year statements and price level changes. Job search skills are also emphasized.

Prerequisite: Prerequisite: BA 121 Professional Accounting II with a C or better.

BA 169Z - Data Analysis Using Microsoft Excel (4)
Covers Microsoft Excel software skills necessary for evidence-based problem-solving, including workbook editing, formula creation, charting, and pivot tables. Emphasizes hands-on learning using Excel functions to perform data analysis to enhance decision-making.

BA 177 - Payroll Accounting (3)
Designed to teach, reinforce and supplement payroll skills in both manual and computerized formats.

Prerequisite: Prerequisite: BA 111 Practical Accounting I or BA 211Z Principles of Accounting: Financial with a grade of C or better.

BA 201 - Applied Business Analytics (4)
Introduces the fundamentals of business and data analytics. Covers relational database fundamentals and Structured Query Language (SQL) programming skills in the Microsoft environment. Includes topics such as relational database architecture, database design techniques, data retrieval, data integrity, and simple and complex query skills. Explores the topics of data analytic thinking and its applicability to the business world. This course is intended for students new to the SQL programming language.

Prerequisite: Prerequisite: BA 169Z Data Analysis Using Microsoft Excel with a grade of C or better.

BA 206 - Principles of Management (3)

An overview of the processes involved in managing a business, including business planning, organizing, controlling, staffing and leading. Covers various theories of management with emphasis on managing a business in the local, national or international marketplace.

BA 211Z - Principles of Financial Accounting (4)
Imparts an understanding of the purpose of accounting, common financial statement items, and the principles of internal controls. Focuses on recording the impact of economic events on account balances using U.S. Generally Accepted Accounting Principles, and the creation and analysis of financial statements to aid in external decision making.

Prerequisite: Prerequisites: MTH 075 Variables and Linear Equations or MTH 098 Foundations for Contemporary Math or higher with a grade of C or better, or ALEKS placement score of 30 or higher.

BA 213Z - Principles of Managerial Accounting (4)
Builds an understanding of the role of managerial accounting in a business, focusing on the development and use of information to evaluate production costs and operational performance in support of short- and long-term organizational decision-making.

Prerequisite: Prerequisite: BA 211Z Principles of Financial Accounting with a grade of C or better.

BA 215 - Survey of Accounting (4)
Introduces financial accounting techniques, measuring and recording transactions, preparing financial statements, managerial decision making, and planning and control devices, such as budgeting, cost accounting, variance analysis, and break-even analysis. Includes assessment of financial information from managers, lenders, and investorsäó» perspective to understand and evaluate business operations. Emphasizes ethical decision-making in the work environment.

Prerequisite: Prerequisite: MTH 075 or higher with a grade of C or better.

BA 216 - Cost Accounting (3)

Relates theory to practical problems in analysis and control of material, labor and overhead costs in manufacturing. Emphasizes the job cost system.

Prerequisite: Prerequisite: BA 120 Professional Accounting I or BA 211Z Principles of Accounting: Financial with a C or better.

BA 218 - Personal Finance Planning (3)

This course introduces essential concepts and skills required to effectively manage money. Students will learn how to budget money, how to save or borrow money, how to interpret a credit score, and how to interpret and analyze other financial choices. In doing so, students will develop a range of mathematical skills that will allow them to model and solve problems applicable to personal finance.

BA 219 - Governmental Accounting (3)

Course covers accounting theory and procedures for governmental and not-for-profit entitites including budgetary and expenditure control.

Prerequisite: Prerequisite: BA 113 Practical Accounting III or BA 211Z Principles of Accounting: Financial with a C or better.

BA 222 - Financial Management (3)
Covers topics dealing with financing a business, analysis of financial statements, working capital management, short- and long-term financial planning, budgeting and control.

Prerequisite: Prerequisite: BA 113 Practical Accounting III or BA 215 Survey of Accounting or BA 211Z Principles of Accounting: Financial with a grade of C or better.

BA 223 - Principles of Marketing (4)

Provides a general survey of the nature, significance and scope of marketing. Emphasizes customers (marketing analysis and strategy); business marketing decisions in promotion, distribution and pricing; and control of marketing programs.

BA 224 - Human Resource Management (3)

Explores the basics of human resource management including selection and hiring, performance appraisal, compensation, staff planning and job analysis. This course also addresses current HR issues such as job search in a difficult economy, discrimination and harassment, workplace violence and on-the-job drug abuse.

BA 226Z - Introduction to Business Law (4)
Provides a comprehensive overview of U.S. business law, including the legal system, contracts, torts, intellectual property, agency, employment, and business organization forms. Emphasizes practical legal knowledge and explores how laws impact business operations, with a focus on risk management, contract disputes, business formation, and compliance with government regulation. Introduces legal challenges in business through real cases and legal terminology.

BA 228 - Computerized Accounting (3)

Provides hands-on computer experience in accounting applications, including general ledger, accounts receivable, accounts payable, payroll, and financial statements.

Prerequisite: Prerequisite: BA 111 Practical Accounting I or BA 211Z Principles of Accounting: Financial with a C or better.

BA 240 - Finance (4)
Introduces basic tools of finance and applications of financial theory with an emphasis on quantitative approaches to decision making. Includes rates of return, the time value of money, the logic and fundamentals of financial statements, financial decision-making, and equity and debt markets.

Prerequisite: Prerequisite: BA 211Z and EC 201Z with a grade of C or better.

BA 243 - Social Media Marketing (3)
Introduces Social Media Marketing (SMM), the use of social media by marketers to increase brand awareness, identify key audiences, generate leads and build meaningful relationships with customers. Explores how social media allows businesses to gain a competitive advantage through the creation and distribution of valuable, relevant, and consistent content to attract and retain key audiences. Emphasizes the importance of understanding and using new and evolving social media marketing strategies for business.

BA 249 - Retail Management (3)

Introduces students to retailing and provides an understanding of the types of businesses, strategies, operations, formats and environments through which retailing is carried out. The course takes a multi-disciplinary approach to consider the process and structure of retailing. Retailing topics to be covered will include: planning, research, consumers' behavior, store design, merchandising strategy, management strategy, promotional strategy and pricing strategy. The global dimensions of retailing as well as the relationship between retailing and our society will be stressed throughout the course.

BA 256 - Income Tax Accounting I (4)
Introduces the basics of income tax accounting for individuals and business organizations. Builds an understanding of basic tax calculations and of how the Internal Revenue Code impacts individuals and businesses. Explores methods of incorporating and extracting income tax information from an organization's existing financial accounting system. Prepares students for the Oregon Board of Tax Practitioner's Licensed tax Preparer (LTP) exam. Recommended: Strongly recommend BA 101A Business Foundations and BA 111

Practical Accounting I or significant experience working in business.

BA 257 - Income Tax Accounting II (4)
The second course in the Income Tax Accounting sequence. Students continue to focus on preparation for the Oregon Board of Tax Practitioner's Licensed Tax Preparer exam.

Prerequisite: Prerequisite: BA 256 Income Tax Accounting I with a grade of C or better.

BA 260 - Entrepreneurship & Sm Business (4)

Focuses on the entrepreneurial phases associated with the start-up and management of small business. This course will teach future entrepreneurs and managers to recognize opportunities and to use effective entrepreneurial and small business management practices.

BA 275 - Business Quantitative Methods (4)

Presents statistical analysis and quantitative tools for applied problem solving and making sound business decisions. Gives special attention to assembling statistical description, sampling, inference, regression, hypothesis testing, forecasting and decision theory.

Prerequisite: Prerequisite: MTH 111Z or MTH 241 or MTH 251Z with a grade of C or better.

BA 280A - CWE Accounting Technology (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to accounting. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE Coordinator approval. May be repeated for a maximum of 24 credits.

BA 280B - CWE Business Management (1 TO 12)

Gives students practical experience in supervised employment related to business management. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

BA 280C - CWE Marketing (1 TO 12)

Gives students practical experience in supervised employment related to business marketing. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator's approval. May be repeated for a maximum of 24 credits.

BA 285 - Organizational Behavior (4)
An analysis of the behavior of humans as actors in a variety or organizational contexts and cultures, including group, inter-group and individual behavior. A cross cultural perspective of organizational behavior is also examined, including the concepts of time-management, work ethic, teamwork, and verbal and non-verbal communication.

BA 291 - Business Process Management (4)
This course integrates management information systems with operations management and introduces a process-oriented view of the flows of materials, information, products and services through/across functions within an organization.

Prerequisite: Prerequisite: BA 101Z Introduction to Business and BA 169Z Data Analysis Using Microsoft Excel with a grade of C or better.

BI - Biology

BI 101 - General Biology: Ecology and Biodiversity (4)
An introductory lab science course intended for majors in disciplines other than the biological sciences. Topics presented include ecological principles, biodiversity, and impact of human activities on the environment. Additionally the course is designed to help students discover the applications of science to their everyday lives, as well as provide elements of critical thinking. Different sections of this course may emphasize different themes as indicated by the subtitles. Examples include: Environmental Issues, Oregon Ecology, Marine Biology, and Marine Biology for Education Majors or General Biology. Students may select the theme that interests them most, but the course may be used only once to meet

graduation requirements. Biology 101, 102, and 103 need not be taken in numerical order. Recommended: MTH 075 Variable and Linear Equations, college-level reading and writing strongly recommended. This course includes a laboratory component.

BI 102 - General Biology: Cell and Molecular Biology (4)
An introductory lab science course intended for majors in disciplines other than the biological sciences. Topics presented include biological molecules, cellular biology, genetics and inheritance, biotechnology and evolutionary processes. Additionally the course is designed to help students discover the applications of science to their everyday lives, as well as provide elements of critical thinking. Different sections of this course may emphasize different themes as indicated by the subtitles. Examples include Microbial World and General Biology. Students may select the theme that interests them most, but the course may be used only once to meet graduation requirements. Biology 101, 102 and 103 need not be taken in numerical order. Recommended: MTH 075 Variable and Linear Equations, college-level reading and writing strongly recommended for success in this course. This course includes a laboratory component.

BI 103 - General Biology: Organismal Structure and Function (4)
An introductory lab science course intended for majors in disciplines other than the biological sciences. Topics presented include plant anatomy and physiology, human anatomy and physiology, and human diseases. Additionally the course is designed to help students discover the applications of science to their everyday lives, as well as provide elements of critical thinking. Different sections of this course may emphasize different themes as indicated by the subtitles. Examples include: Nutrition and Health, Human Body, Plant and Animal Systems, Dynamic Plant and General Biology. Students may select the theme that interests them most, but the course may be used only once to meet graduation requirements. Biology 101, 102 and 103 need not be taken in numerical order. Recommended: MTH 075 Variable and Linear Equations, college-level reading and writing strongly recommended for success in this course. This course includes a laboratory component.

BI 112 - Cell Biology for Health Occup (4)
Introduces the Health Occupations student to the generalized human cell, including its structure, function, basic genetics and reproduction. The chemical and physical processes that affect the cell and its components will be examined throughout the course. This course covers the basic principles and vocabulary to prepare students for the study of human organ systems that occur in Human Anatomy and Physiology BI 231, BI 232 and BI 233. College-level reading and writing are strongly recommended for success in this course.

BI 200 - Principles of Ecology: Field Biology (4)
An introduction to foundational concepts in ecology. The broad concepts of ecology are emphasized in a field setting using natural ecosystems as a model. The classroom lecture component will cover concepts of community level ecology and a focus on the diversity of life. The field component will teach survey techniques used in the survey of plants and animals and their respective interactions with the natural environment. Sustainability and practices of conservation at a regional level are emphasized in this course. Ecological concepts are examined in detail using student-collected field data or assisting and observing researchers in the field to learn different methods used in field biology. Recommended: College level reading and writing proficiency.

BI 221Z - Principles of Biology: Cells (5)
Explores fundamental biological concepts and theories about the cellular and molecular basis of life including cell structure and function, metabolism, genetic basis of inheritance and how information flows from DNA to proteins, with a focus on the iterative process of science. Intended for science majors.

Prerequisite: Prerequisite: CH 150 Preparatory Chemistry, CH 121 College Chemistry, CH 112 Chemistry for Health Occupations or CH 221Z General Chemistry I with a grade of C or better (can be taken concurrently).

BI 222Z - Principles of Biology: Organisms (5)
Explores fundamental biological concepts and theories about the structure and function of diverse organisms (including plants and animals), evolution and development, transformation of energy and matter, and body systems at a multicellular organismal level. Intended for science majors.

Prerequisite: Prerequisite: BI 221Z Principles of Biology: Cells with a grade of C or better.

BI 223Z - Principles of Biology: Ecology and Evolution (5)
Explores the unity and diversity of life through evolutionary mechanisms and relationships, and adaptation to the environment. Examines population, community, and ecosystem ecology. Intended for science majors.

Prerequisite: Prerequisite: BI 221Z Principles of Biology: Cells with a grade of C or better.

BI 231 - Human Anatomy & Physiology (5)
The first term of an introduction to the structure and function of the human body. Benefits students in the health professions and physical education, but is valuable to others interested in the anatomy and physiology of the body. Focuses on the structure and function of the cell, basic biochemistry, tissues, skin, skeleton and muscles. Includes a laboratory component.

Prerequisite: MTH 075 and BI 112 with a grade of C or better; or BI 221Z Principles of Biology: Cells with a grade of C or better; or equivalent.

BI 232 - Human Anatomy & Physiology (5)

The second term of an introduction to the structure and function of the human body. Benefits students in the health professions and physical education, but is valuable to others interested in the anatomy and physiology of the body. Focuses on the nervous system, endocrine system, and cardiovascular system. Includes a laboratory component.

Prerequisite: Prerequisite: BI 231 Human Anatomy and Physiology with a grade of C or better. Students who are currently enrolled in BI 231 or BI 232 will be allowed to register for the next sequence course (BI 232 or BI 233) before priority registration for continuing students. Current BI 231 and BI 232 faculty will announce the day, time and restrictions for this special registration day. Students will be permitted to register for only the Anatomy and Physiology class at this time. All holds on student accounts must be resolved prior to this registration day. Students must earn a grade of C or better in BI 231 or BI 232 to move to the next sequence course. The week after grades are submitted, students who earned less than a C in BI 232 or BI 233 will be dropped from the pre-registered sequence course. .

BI 233 - Human Anatomy & Physiology (5)

The third term of an introduction to the structure and function of the human body. This course is of particular benefit to students in the health professions and physical education, but is valuable to others interested in the anatomy and physiology of the body. Focuses on the lymphatic system, respiratory system, urinary system, fluid and electrolyte balance, digestive system and reproductive system.

Prerequisite: Prerequisite: BI 232 Human Anatomy and Physiology with a grade of C or better. This course includes a laboratory component.

BI 234 - Microbiology (4)
Introduces all microbial life, with emphasis on bacterial forms. Covers cell structure, metabolism, genetics, growth, and control of growth. Investigates host-pathogen relationships that lead to disease and health. Covers basic microscope and culture procedures and investigates the occurrence and behavior of microorganisms in our environment.

Prerequisite: BI 231 Human Anatomy & Physiology with a grade of C or better.

BI 280 - CWE BIOLOGY (1 TO 12)

Gives students practical experience in supervised employment related to biology. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

CA8. - Culinary Arts Hosp Services

CA8. 301 - Culinary Arts Career Planning (1)
Prepares the student for entering the culinary work force. Students create a resume for use in a mock interview. They prepare a five-year career plan and explore different career opportunities using resources such as the Internet, industry periodicals, and employment department career information.

Prerequisite: CA8. 322 with a grade of C or better.

CA8. 302 - Applied Math for Culinary Arts (3)

Related instruction course for the Associate of Applied Science degree. Includes operations with multiplication, percentages, fractions, conversions, decimals and ratios. Further emphasis on measuring skills and yield percentages. Explores the use of common math functions in relation to recipe costing, cost per unit, cost analysis, and creating budgets. Includes the use of common measuring tools employed in the kitchen and examines the types of computation and problem solving methods utilized in kitchen scenarios.

Prerequisite: CA 101 with a grade of C or better.

CA8. 309 - Purchasing for Chefs (2)
Through lecture, role-playing, research and written assignments, students learn to write specifications for projects and skills needed for working with purveyors. All reports, menus and projects will be completed using a word processing program. Students will also learn standard storeroom procedures.

Prerequisite: CA8. 322 with a grade of C or better.

CA8. 321 - Restaurant & Food Truck Management I (7)
From the fundamental skills attained in CA 101, 102 and 103, students refine and advance their culinary skill to include a la carte, front line cookery, advanced baking and pastry, advanced garde manger and dining room management skills. Students are directly involved in running a working restaurant, giving them a realistic experience while honing work habits and awareness of production demands.

Prerequisite: Prerequisite: Grade of B or higher in CA 101 Culinary Arts Practicum I, CA 102 Culinary Arts Practicum II, and CA 103 Culinary Arts Practicum III. (Exceptions may be made on a case by case basis.).

CA8. 322 - Restaurant & Food Truck Management II (7)
From the fundamental skills attained in CA 101, 102 and 103, students refine and advance their culinary skill to include a la carte, front line cookery, advanced baking and pastry, advanced garde manger and dining room management skills. Students are directly involved in running a working restaurant,giving them a realistic experience while honing work habits and awareness of production demands.

Prerequisite: Prerequisite: CA8. 321 Restaurant & Food Truck Management I with a grade of "C" or better. Required: B or higher grade in CA 101 Intro to Culinary Arts, CA 102 Patisserie & Baking, and CA 103 Menu Development & Tournant Cooking. (Exceptions may be made on a case by case basis.).

CA8. 323 - Restaurant & Food Truck Management III (7)
From the fundamental skills attained in CA 101, 102 and 103, students refine and advance their culinary skill to include a la carte, front line cookery, advanced baking and pastry, advanced garde manger and dining room management skills. Students are directly involved in running a working restaurant,giving them a realistic experience while honing work habits and awareness of production demands.

Prerequisite: Prerequisite: CA8. 322 Restaurant & Food Truck Management II. Required: B or higher grade in CA 101 Intro to Culinary Arts, CA 102 Patisserie & Baking, and CA 103 Menu Development & Tournant Cooking. (Exceptions may be made on a case by case basis.).

CA8. 341 - Soups and Sauces (3)

Students study and practice the art of classical and modern, soup and sauce making from varied national and ethnic cuisines. Hands-on class activities stress both large scale and a la carte production techniques.

Prerequisite: CA8. 321 with a grade of C or better.

CA8. 344 - Beer & Food Pairing (3)

Explore the use of beer in the preparation and pairing of food. Includes experimentation and tasting in a hands-on environment. Also learn to identify the characteristics of food and match them with complementary beer. Required: All students must be over 18 years of age (proof of age will be required).

CA8. 349 - Cooking with Wine (Sauces) (3)
Explores the use of wine in the preparation of sauces. Learn technology skills by preparing a spreadsheet containing an inventory of tasting notes and preparing a paper using a word processing program. Includes experimentation and tasting in a hands-on environment. Covers the identification of the character of sauces and matching them with complementary wines. Required: All students must be over 18 years of age. Proof of age will be required. Recommended: CA 8.346 Culinary Fundamentals with a grade of C or better.

CA8. 350 - Banquets & Buffets A (1)

Provides students the opportunity to participate in actual banquet and buffet functions, from small caterings to very large banquets. Set up, production load, banquet and catering plans, service techniques, organizational skills, costs and breakdown systems are presented.

Prerequisite: CA 101 with a grade of C or better.

CA8. 351 - Banquets & Buffets B (2)

Provides students the opportunity to participate in actual banquet and buffet functions, from small caterings to very large banquets. Set up, production load, banquet and catering plans, service techniques, organizational skills, costs and breakdown systems are presented.

Prerequisite: CA 102 with a grade of C or better.

CA8. 352 - Banquets & Buffets Lab C (1)

Provides students the opportunity to participate in actual banquet and buffet functions, from small caterings to very large banquets. Set up, production load, banquet and catering plans, service techniques, organizational skills, costs and breakdown systems are presented.

Prerequisite: CA8. 321 with a grade of C or better.

CA8. 353 - Banquets & Buffets D (3)
Provides students the opportunity to participate in actual banquet and buffet functions, from small caterings to very large banquets. Set up, production load, banquet and catering plans, service techniques, organizational skills, costs and breakdown systems are presented. Students will exercise leadership skills as they actively participate, communicate and help others learn as a member of a team. Students will provide service and satisfy the expectations of diverse groups of customers. May be repeated for a maximum of 9 credits.

Prerequisite: Prerequisite: CA 103 Culinary Arts Practicum III with a grade of C or better.

CA8. 354 - Banquets & Buffets E (1)

Covers the planning and execution of a banquet, buffet or catering as a member of a team. Students evaluate food for taste arrangement, adherence to theme, cost, etc. Students learn set-up, service and clean up procedures for a large food function. Required: Instructor approval.

CA8. 355 - Banquet & Buffet Planning (2)

To be taken in conjunction with CA 8.353 Banquet and Buffet Lab D. Students participate in the planning and execution of spring term banquets, food show and other special events.

Prerequisite: CA8. 321 with a grade of C or better.

CA8. 360 - Cooking with Wine (Entrees) (3)
Explores the use of wine in the preparation of main entrees. Covers material through experimentation and tasting in a hands-on environment. Emphasizes identifying the distinguishing characteristics of foods and dishes and matching them with complementary wines.
Required: Students must be over 18 years of age. Proof of age is required. Recommended: CA 8.346 Culinary Fundamentals with a grade of C or better.

CA8. 368 - Creating the Menu (2)

Students are expected to create a menu and support documentation for a restaurant or other food operation using the skills and concepts presented in this class. Throughout the term students will work on components of the final project.

Prerequisite: CA 103 with a grade of C or better.

CA8. 373 - Costings (1)

Teaches theory and practice of determining food cost for restaurant and institutional cooking.

Prerequisite: CA 102 with a grade of C or better.

CA8. 380 - Plated Desserts (3)

An advanced pastry class focusing on the techniques for plate presentation of chocolate, confections, and frozen desserts. This course will cover chocolate tempering, chocolate decorating, and garnishes to maximize impact. We will discuss sugar work and cover techniques for making garnishes. This course will also cover equipment, ingredients, and trouble shooting for confection work. We will cover freezing, mixing, and consistency for frozen dessert products.

CA8. 381 - Fruit Desserts and Laminated Doughs (3)

An advanced course focusing on fruit desserts and presentation techniques. We will integrate laminated doughs for structure, appearance, and flavor.

CA8. 382 - Chocolate, Confections and Frozen Desserts (3)

An advanced pastry class focusing on the techniques chocolate, confections and frozen desserts. This course will cover chocolate tempering, chocolate decorating, truffles and confections. We will discuss sugar work, cover techniques for making candy. This course will also cover equipment, ingredients and trouble shooting for confection work. We will cover freezing, mixing and consistency for frozen dessert products.

CA8. 383 - The Breads of France (3)

An advanced bread class focusing on the techniques of the French Boulanger. This course will cover breads from cities of France and cover the techniques that make these

breads unique. This course will also cover equipment, ingredients, and trouble shooting for the perfect loaf of French bread.

CA8. 384 - Advanced Cakes and Pastries (3)

An advanced cake and pastry cake course focusing on complex cake construction, Bavarians, mousses, decorating, and presentation techniques.

CA8. 385 - Advanced Breads (3)

An advanced bread class focusing on the ten steps of yeast production, and techniques for roll-in doughs, enriched doughs, pre-fermentation, sourdough, bagels, and flatbreads.

CA8. 386 - Preserving & Canning Harvest (3)
Provides hands-on kitchen canning and preservation practice. Focuses on extending the shelf life of foods and providing nutrition throughout the year. Emphasizes the science of canning and the art of tastefully preserving food products for entertaining and long term storage.

CA8. 409 - Meats (3)
Addresses fabricating primal and sub-primal cuts of beef, pork and lamb for profitable use in restaurants. Includes knife techniques, portion cutting, and safe and sanitary meat handling and storage. Proper cooking procedures and techniques also are presented. Handling and tasting of meat products is an integral and required part of this class.

Prerequisite: Prerequisite: CA 103 Culinary Arts Practicum III with a grade of C or better.

CA8. 414 - Presentation/Garde Manger (2)
Traditional and contemporary presentation techniques are presented and practiced as part of this hands-on class. Charcuterie, hors d'oeuvres, appetizers and pates are explored.

Prerequisite: CA8. 321 with a grade of C or better.

CA8. 421 - World Cuisine (3)
Focuses on styles and flavor components of a variety of regional and national cuisines. Covers the influence of geography, religion and culture on cuisine. Includes written reports, designing menus, and other assignments that focus on world cuisine.

CA - Culinary Arts Transfer

CA 101 - Intro to Culinary Arts (7)
Practicum classes I, II, and III provide a comprehensive hands-on sequence designed to develop, through practice, the basic skills and attitudes necessary for a successful career in Food Service. Stations include Baking, Pantry, Garde Manger, Soups and Sauces, Entree Cookery, Vegetable Cookery, Healthy and Natural Foods, and Dining Room. High professional standards and attitudes are stressed. These practicums are designed for the serious career-oriented individual.

Corequisite: Corequisite: CA 111 Foodservice Safety and Sanitation; CA 112 Stations, Tools and Culinary Techniques.

CA 102 - Patisserie & Baking (8)
The Practicum classes I, II, and III provide a comprehensive hands-on sequence designed to develop, through practice, the basic skills and attitudes necessary for a successful career in Food Service. Stations include Baking, Pantry, Garde Manger, Soups and Sauces, Entree Cookery, Vegetable Cookery, Healthy and Natural Foods and Dining Room. High professional standards and attitudes are stressed. These practicums are designed for the serious career-oriented individual.

Prerequisite: Prerequisite: CA 101 Intro to Culinary Arts with a grade of C or higher.

CA 103 - Menu Development & Tournant Cooking (8)
The Practicum classes, I, II and III provide a comprehensive hands-on sequence designed to develop, through practice, the basic skills and attitudes necessary for a successful career in Food Service. Stations include Baking, Pantry, Garde Manger, Soups and Sauces, Entree Cookery, Vegetable Cookery, Healthy and Natural Foods, and Dining Room. High professional standards and attitudes are stressed. These practicums are designed for the serious career-oriented individual.

Prerequisite: Prerequisite: CA 102 Patisserie & Baking with a grade of C or higher.

CA 111 - Foodservice Safety and Sanitation (1)
Helps students gain an awareness of the hazards of poor sanitation and safety practices and how to properly address those issues. Students, through lecture, assigned reading and case study, learn the essentials of food handling, proper personal hygiene, equipment handling and facilities management, environmental responsibility, ethics, how to control and eliminate foodborne illness, and proper handling of hazardous materials. Corequisite: CA 101 Intro to Culinary Arts, CA 111 Foodservice Safety

and Sanitation and CA 112 Stations, Tools and Culinary Techniques.

Corequisite: Corequisite: CA 101 Intro to Culinary Arts, CA 111 Foodservice Safety and Sanitation and CA 112 Stations, Tools and Culinary Techniques.

CA 112 - Stations, Tools, and Culinary Techniques (3)

Provides students a thorough first exposure to the history of food service; the identification and use of common ingredients; professional work habits and attitudes; and to a basic understanding of equipment, knife handling techniques and culinary terms and methods. Corequisite: CA 111 Foodservice Safety and Sanitation and CA 112 Stations, Tools and Culinary Techniques.

Corequisite: Corequisite: CA 101 Culinary Arts Practicum I, CA 111 Foodservice Safety and Sanitation.

CA 201 - Culinary Arts Career Planning (1)
Students will prepare for entering the Culinary workforce. Students will organize a search for work including the preparation of a resume for use in mock interview, writing a letter of application, and completing a standard application form. They will prepare a five-year career plan and will explore different career opportunities using resources such as the Internet, industry periodicals, and employment department career information.

CA 280 - CWE CULINARY ARTS (1 TO 12)

Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress towards student goals with their site supervisor and their CWE Faculty Coordinator. Required: CWE Coordinator approval.

CAT - Computed Tomography

CAT 230 - Basic Prin Computed Tomography (1)
Content is designed to provide entry level radiography student and/or an ARRT technologist with an introduction to a basic understanding of the operation of a computed tomography device. Content is not intended to result in clinical competency. Critical thinking is emphasized.

CAT 231 - Patient Care and Assessment for CT (3)
Content is designed to provide the basic concepts of patient care in CT, including consideration for the physical and psychological needs of the patient and family. Routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions. The role of the radiographer in CT patient education is identified. Critical thinking and cultural competence is emphasized.

Prerequisite: Prerequisite: CAT 230 Basic Principles of Computed Tomography with a C or better.

CAT 232 - Imaging Procedures & Sectional Anatomy for CT (4)
Content incorporates a detailed study of gross anatomical structures, conducted systematically for location, relationship to other structures and function. Gross anatomical structures are located and identified in axial (transverse), sagittal, coronal and orthogonal (oblique) planes. The characteristic appearance of each anatomical structure as it appears on CT will be stressed. Critical thinking is emphasized.

Prerequisite: Prerequisite: CAT 231 Patient Care and Assessment for CT with a C or better.

CAT 233 - Physics & Instrumentation CT (4)
Content is designed to impart an understanding of the physical principles and instrumentation involved in computed tomography. Physics topics covered include x-radiation in forming the CT image, CT beam attenuation, linear attenuation coefficients, tissue characteristics and Hounsfield numbers application. Data acquisition and manipulation techniques, image reconstruction algorithms will be explained. Computed tomography systems and operations will be explored with full coverage of radiographic tube configuration, collimator design and function, detector types, characteristics and functions and the CT computer and array processor. CT image processing and display will be examined from data acquisition through postprocessing and archiving and patient factors related to other elements affecting image quality will be explained, as well as artifact production and reduction and image communication.

Prerequisite: Prerequisite: CAT 232 Imaging Procedures and Sectional Anatomy for CT with a C or better.

CAT 234 - Clinical Externship CT (3)
Provides a externship experience designed to develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of computed tomography procedures through structured, sequential, competency-based clinical assignments. Covers concepts of team work, patient-centered clinical practice and professional development. Includes patient care and assessment, competent performance of computed

tomography exams and total quality management. Critical thinking and cultural competency is emphasized.

CE6. - Civil Engineering Vocational

CE6. 444 - Civil Design Lab (1)

A course in civil engineering design. Emphasizes the design of roads, waterlines, sanitary sewer lines and storm drains.

CE6. 488 - Advanced Surveying & Land Development (4)

Advanced course in surveying and land development. Emphasizes land and construction surveying and the process of developing land. Recommended: Completion of MTH 111Z (p. 181) Precalculus I: Functions.

Prerequisite: Prerequisite: EG 4.456 Civil Drafting Lab and CEM 263 Plane Surveying with a grade of "C" or better.

CEM - Civil Engineering

CEM 263 - Surveying (3)

Basic course in surveying techniques and computations. Includes distance measuring, leveling, cross sectioning, grade staking, traversing, control surveying, and topographic surveying; includes the use of traditional surveying instruments and Global Positioning Systems (GPS). Required: Completion of MTH 111Z (p. 181) Precalculus I: Functions and familiarity with Right Angle Trigonometry.

CH - Chemistry

CH 112 - Chemistry for Health Occupations (5)
Introduces topics in inorganic chemistry selected to prepare students entering Nursing, Diagnostic Imaging, and related Health Occupations programs. Includes a laboratory component.

Prerequisite: MTH 095 Intermediate Algebra.

CH 121 - College Chemistry I (5)
The first course in a three-course college chemistry series for students in human performance, agriculture, animal science, fisheries and wildlife, and select health occupations programs, who have had no previous training in chemistry and whose program of study requires only a one-year sequence of college chemistry. Topics include atomic theories, electron configurations, periodic properties, bond formations, nomenclature, chemical bonding, chemical equations, and stoichiometry.

Entering students are expected to have a working knowledge of high school algebra and scientific notation. Students are advised to investigate and understand the degree requirements at the university where they intend to transfer. (Note - this sequence is not equivalent to General Chemistry.) CH 121, CH 122, CH 123 must be taken in order.

Prerequisite: Prerequisite: MTH 095 Intermediate Algebra or MTH 111Z Precalculus I: Functions or higher with a grade of C or better (may be taken concurrently).

CH 122 - College Chemistry II (5)
The second course in a three-course college chemistry series for students in human performance, agriculture, animal science, fisheries and wildlife, and select health occupations programs, who have had no previous training in chemistry and whose program of study requires only a one-year sequence of college chemistry. Topics include thermochemistry, gases, liquids, solids, intermolecular forces, solutions, chemical kinetics, and chemical equilibrium.

Students are advised to investigate and understand the degree requirements at the university where they intend to transfer. (Note - this sequence is not equivalent to General Chemistry. CH 122 and CH 123 fulfill Baccalaureate Core requirements at OSU.) CH 121, CH 122, CH 123 must be taken in order.

Prerequisite: Prerequisite: MTH 111Z Precalculus I: Functions and CH 121 College Chemistry, or CH 201 Chemistry for Engineering Majors I, or CH 221Z General Chemistry I with a grade of C or better.

CH 123 - College Chemistry III (5)
The third course in a three-course college chemistry series for students in human performance, agriculture, animal science, fisheries and wildlife, and select health occupations programs, who have had no previous training in chemistry and whose program of study requires only a one-year sequence of college chemistry. Topics include acid-base equilibrium, buffers, ionic equilibrium, thermodynamics, electrochemistry, and organic chemistry.

Students are advised to investigate and understand the degree requirements at the university where they intend to transfer. (Note - this sequence is not equivalent to General Chemistry. CH 122 and CH 123 fulfill Baccalaureate Core requirements at OSU.) CH 121, CH 122, CH 123 must be taken in order.

Prerequisite: Prerequisite: CH 122 College Chemistry II, or CH 202 Chemistry for Engineering Majors II, or CH 222Z General Chemistry II with a grade of C or better.

CH 150 - Preparatory Chemistry (3)
Introduces chemistry for science, engineering, and select professional health occupations programs and meets the prerequisite for CH 221. Covers the basic tools offered in a one-year high school chemistry course. Provides a refresher in chemistry for students with little or no background in chemistry who need to meet the prerequisite for CH 221. Includes topics such as chemical calculations and problem-solving techniques encountered in both inorganic and organic chemistry. Lecture only. Does not include a lab.

Prerequisite: MTH 095 Intermediate Algebra with a grade of C or better. Note: Can be taken concurrently.

CH 201 - Chemistry For Engineering Majors I (5)
The first course of a two-course series of selected chemistry topics for pre-engineering students. Provides engineering majors with a fundamental understanding of chemical reactions and scientific measurements. Introduces students to principles, laws, and equations that govern our understanding of chemical combinations. Includes a laboratory component.

Prerequisite: MTH 111Z College Algebra with a grade of C or better, or equivalent.

CH 202 - Chemistry For Engineering Majors II (5)
The second course of a two-course series of selected chemistry topics for pre-engineering students. Provides engineering majors with a fundamental understanding of chemical reactions and scientific measurements. Introduces students to principles, laws, and equations that govern our understanding of chemical combinations. Includes a laboratory component.

Prerequisite: CH 201 with a grade of C or better.

CH 221Z - General Chemistry I (4)
Explores and applies principles and applications of chemistry. Emphasis on measurement, components of matter, atomic and molecular structure, quantitative relationships including foundational stoichiometry, and major classes of chemical reactions. CH 221Z is a lecture course; CH 227Z is the laboratory component.

Prerequisite: Prerequisite: Completion of high school chemistry with a grade of C or better and a passing score on the chemistry entrance exam; or CH 150 Preparatory Chemistry with a grade of C or better, or CH 121 College Chemistry with a grade of C or better or CH 112 Chemistry for Health Occupations with a grade of C or better; and MTH 095 Intermediate Algebra with a grade of C or better, or equivalent. Corequisite: Corequisite: CH 227Z General Chemistry I Laboratory.

CH 222Z - General Chemistry II (4)
Explores and applies principles presented in CH 221Z to the study of the solid, liquid, and gaseous states of matter. Principles of stoichiometry, thermochemistry, kinetics, and foundational equilibrium are explored and applied to the study of aqueous and gas-phase chemical reactions. CH 222Z is a lecture course; CH 228Z is the laboratory component.

Prerequisite: Prerequisite: CH 221Z General Chemistry I, CH 227Z General Chemistry I Laboratory and MTH 111Z Precalculus I: Functions with a grade of C or better. Corequisite: Corequisite: CH 228Z General Chemistry II Laboratory.

CH 223Z - General Chemistry III (4)
Builds upon the principles presented in CH 222Z, explores thermodynamics and chemical equilibrium, and applies them to the study of aqueous acid-base reactions, solubility, and electrochemistry. CH 223Z is a lecture course; CH 229Z is the laboratory component.

Prerequisite: Prerequisite: CH 222Z General Chemistry II and CH 228Z General Chemistry II Laboratory with a grade of C or better. Corequisite: Corequisite: CH 229Z General Chemistry III Laboratory.

CH 227Z - General Chemistry I Laboratory (1)
Experiments correspond to the topics covered in CH 221Z including the fundamentals of chemical measurements, quantitative relationships in chemical analysis, and understanding atomic and molecular structure. CH 227Z is the laboratory component; CH 221Z is the lecture course.

Prerequisite: Prerequisite: Completion of high school chemistry with a grade of C or better and a passing score on the chemistry entrance exam; or CH 150 Preparatory Chemistry with a grade of C or better, or CH 121 College Chemistry with a grade of C or better or CH 112 Chemistry for Health Occupations with a grade of C or better; and MTH 095 Intermediate Algebra with a grade of C or better, or equivalent. Corequisite: Corequisite: CH 221Z General Chemistry I.

CH 228Z - General Chemistry II Laboratory (1)
Experiments correspond to the topics covered in CH 222Z, including the fundamentals of intermolecular interactions, stoichiometric relationships, chemical equilibria, and their application to the synthesis, identification, and analysis of chemical compounds. CH 228Z is the laboratory component; CH 222Z is the lecture course.

Prerequisite: Prerequisite: CH 221Z General Chemistry I, CH 227Z General Chemistry I Laboratory and MTH 111Z Precalculus I: Functions with a grade of C or better. Corequisite: Corequisite: CH 222Z General Chemistry II.

CH 229Z - General Chemistry III Laboratory (1)
Experiments correspond to the topics covered in CH 223Z including the principles of chemical equilibria and their application to chemical analysis using volumetric and electrochemical methods. CH 229Z is the laboratory component; CH 223Z is the lecture course.

Prerequisite: Prerequisite: CH 222Z General Chemistry II and CH 228Z General Chemistry II Laboratory with a grade of C or better. Corequisite: Corequisite: CH 223Z General Chemistry III.

CH 241 - Organic Chemistry (4)
The first course of a three-course series for students in the sciences, chemical engineering, and professional health programs. Covers topics such as nomenclature, in-depth treatment of major classes of organic compounds, mechanisms, and synthesis. Includes a laboratory component.

Prerequisite: CH 123 College Chemistry or CH 223Z General Chemistry III with a grade of C or better.

CH 242 - Organic Chemistry (4)
The second course of a three-course series for students in the sciences, chemical engineering, and professional health programs. Covers topics such as nomenclature, in-depth treatment of major classes of organic compounds, spectroscopy, mechanisms and synthesis. Includes a laboratory component.

Prerequisite: CH 241 Organic Chemistry with a grade of C or better.

CH 243 - Organic Chemistry (4)
The first course of a three-course series for students in the sciences, chemical engineering, and professional health programs. Covers topics such as nomenclature, in-depth treatment of major classes of organic compounds, spectroscopy, mechanisms and synthesis. Includes a laboratory component.

Prerequisite: CH 242 Organic Chemistry with a grade of C or better.

CH 280 - CWE CHEMISTRY (1 TO 14)

Designed to give students practical experience through supervised employment related to chemistry. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

CMA - Medical Assistant

CMA 137 - Administrative Office for the Medical Assistant (3)
Prepares students to function as a front office team member in the medical office. Requires participation in individual and group projects to demonstrate an ability to work in an administrative office setting.

CMA 139 - Finance in the Medical Office (3)
Emphasizes computation skills necessary to effectively manage accounts receivable, financial reporting, and the communication of this information to patients and insurance providers. Requires participation in individual and group projects to demonstrate an ability to work in an administrative office setting.

CMA 141 - Medical Terminology for Medical Assistants (4)
Covers the appropriate use of medical terminology and how to identify the structural organization of the body. Includes identification of the normal function of each body system.

CMA 144 - Law and Ethics for the Medical Assistant (3)
Prepares students to be able to comprehend, interpret, and respond to legal and ethical issues in the medical office setting.

CMA 145 - Pathology for the Medical Office (3)
Familiarizes students with common pathologies related to each body system as well as issues related to treatments. Covers how pathologies change throughout the lifespan.

Prerequisite: CMA 141 with a grade of C or better.

CMA 146 - Pharmacology for the Medical Assistant (3)
Familiarizes students with the top 100 medications currently used in medical offices. Includes ;desired effects, side effects, and adverse reactions to the medications covered.

CMA 148 - Practicum Seminar and Exam Coaching (3)
Provides an opportunity to debrief and discuss practicum experiences in addition to review the many clinical competencies covered on during the national examination. Covers strategies to help pass the certification exam.

CMA 149 - Reimbursement in Healthcare (3)
Explores the evolution and function of health insurance. Includes Medicare, Medicaid, commercial, and managed care. Covers how to understand, prepare, and process claims. Emphasizes computation skills necessary for payment and reimbursement.

CMA 150 - Coding for Medical Assistants (2)
Develops knowledge of coding including Healthcare Common Procedure Coding System (HCPCS), Current Procedural Terminology (CPT), and ICD-10 (International Statistical Classification of Diseases).

CMA 151 - Communication for the Medical Assistant (3)
Introduces students to the medical office setting. Emphasizes effective use of different types of communication and addressed communication barriers.

CMA 152 - Human Relations for Medical Assistants (2)
Prepares students to understand the mental processes and behaviors of individuals and groups. Emphasizes coaching patients appropriately giving consideration to cultural, social, and ethnic diversity. Includes group work.

CMA 240 - Medical Assistant Clinical Block 1 (4)
Prepares the student to work at a basic level as a clinical medical assistant in the outpatient setting. They will be competent to perform quality control and practice appropriate safety precautions. Prepare the student to perform advanced math skills for clinical procedures.

CMA 243 - Medical Assistant Lab Block I (4)
Prepares the student to perform CLIA-waived tests in a physician's office laboratory. Students will be competent to perform quality control and practice appropriate safety precautions.

CMA 244 - Medical Assisting Clinical Block II (4)
Prepares the student to function as a medical assistant in the medical office assisting with complex procedures and/or treatments.

CMA 246 - Medical Assistant Lab Block 2 (4)
Prepares the students to be able to collect blood samples safely using universal precautions and to perform electrocardiograms in a clinical setting. Emphasizes appropriate use of therapeutic communication skills.

CMA 250 - Administrative Practicum (3)
Students apply all major administrative competencies and concepts learned in the one-year medical assistant program to a real-world experience in local medical facilities.

Prerequisite: Prerequisite: Completion of all previous Medical Assistant program coursework with a grade of C or better.

CMA 260 - Clinical Practicum (6)
Students apply all major clinical competencies and concepts learned in the one-year Medical Assistant program to a real-world experience in local medical facilities.

Prerequisite: Prerequisite: Completion of all previous Medical Assistant program coursework with a grade of C or better.

COMM - Communication

COMM 100Z - Introduction to Communication (4)
COMM 100Z is a survey course offering an overview of the communication discipline that emphasizes the development of best communication practices in different contexts.

COMM 111Z - Public Speaking (4)
COMM 111Z emphasizes developing communication skills by examining and demonstrating how self-awareness, audience, content, and occasion influence the creation and delivery of speeches and presentations.

Prerequisite: Recommended: College-level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

COMM 114 - Argument and Critical Discourse (3)
Examination of argumentation as a part of human interaction and investigation. The course emphasizes the processes by which people give reasons to gain adherence and to justify beliefs and actions. Students will develop, deliver, and critically analyze persuasive arguments through written assignments and in-class presentations. Recommended: Completion of WR 121Z with a grade of C or better.

COMM 218Z - Interpersonal Communication (4)
COMM 218Z increases the knowledge and use of competent communication skills to better understand oneself, others, and the role of communication in interpersonal relationships.

Prerequisite: Recommended: College-level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

COMM 226 - Intercultural Communication (3)
Highlights a critical approach to intercultural communication. Explores cultural-general concepts, power dimensions, and macro-structures of society to demonstrate how culture affects communication. Raises self-awareness and other-awareness concerning cultural group memberships and personal identities. Emphasizes respect for diverse ways of communicating in different cultural situations. Develops skills to communicate effectively with others.

COMM 280 - CWE COMMUNICATION (1 TO 14)

Gives students practical experience in supervised employment related to speech. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

CRS - Coding Reimb Specialist

CRS 101 - Coding I (5)
Introduces students to the concepts important to medical coding. Focuses on teaching diagnostic coding and the ICD-10 manual, procedural coding manual familiarity (Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS)), as well as coding compliance and regulation.

CRS 102 - Coding II (5)

Prepares medical coding students for detailed procedural coding in integumentary, musculoskeletal, respiratory, and cardiovascular systems. Covers the use of ICD-10 diagnostic codes as principal, primary, secondary, and tertiary medical necessity justification. Prepares students to competently select accurate Healthcare Common Procedure Coding System (HCPCS) codes for supplies, medications, transportation, etc.

Prerequisite: CRS 131 and CRS 101 with a grade of C or better.

CRS 103 - Coding III (5)

Covers detailed procedural coding in digestive systems, male urinary and genital systems, female genital and reproductive systems, endocrine systems, nervous systems, and eyes and ears. Prepares students to demonstrate competency in procedural and diagnostic coding in the fields of anesthesia; pathology/laboratory and medicine.

Prerequisite: CRS 102 with a grade of C or better.

CRS 110 - Medical Insurance Procedures (4)
Prepares the student to understand the evolution and function of health insurance, to include Medicare, Medicaid, commercial and managed care. Covers how to understand, prepare and process claims.

CRS 125 - Medical Office Communication (3)
Introduces students to effective communication in the medical setting. Covers a variety of communication methods specific to the medical office.

CRS 126 - Medical Documentation for Coders (3)
Trains student to read and interpret medical documentation in order to extrapolate data for the purposes of properly coding diagnoses and services rendered.

CRS 127 - Medical Law and Ethics for Coders (3)
Covers how to comprehend and interpret legal and ethical issues in the healthcare setting. Includes how to respond to such issues.

CRS 130 - General Medical Terminology (3)
Covers the appropriate use of medical terminology and how to identify and describe body structures and systems.

CRS 131 - Medical Terminology and Body Systems I for Coding and Reimbursement (3)
Introduces the appropriate medical terminology used to identify the structural organization of the body, identify body systems, and describe body orientation. Includes identification of the normal function of each body system, word parts, and abbreviations as they relate to body systems. This course is for students enrolled in the Coding and Reimbursement Program.

CRS 132 - Medical Terminology and Body Systems II (3)
Prepares the student to list major organs in each body system and describe their function. Emphasizes identifying and analyzing the proper functions related to each system. Covers the implications for failure of the system, organ or component that relates to each system as well as issues related to treatment for each system and how it might change throughout the lifespan.

CRS 133 - Medical Terminology and Body Systems III (3)
Prepares the student to list major specialties in medicine, allied health, and their qualifications as well as their contribution to the overall health care system. Covers acute and chronic body system diseases, processes, and failures addressed by these major specialties and branches of allied health; as well as common treatment modalities for each system and how these might change throughout the lifespan.

CRS 134 - Pathology for Coders (3)
Prepares the student to identify and analyze pathologies related to each body system as well as issues related to the treatment of each pathology and how it changes throughout the lifespan.

CRS 180A - Medical Office Management for Coders (3)
Prepares students to function as coders in a healthcare office environment. Requires participation in both group and individual projects and competency assessments in order to demonstrate basic medical office administrative management tasks. Emphasizes computation skills necessary for managing basic financial tasks and patient account information. Includes training, demonstration, and assessment in back-end coding responsibilities to prove competency.

Prerequisite: CRS 102 Coding II with a grade of C or better. Corequisite: CRS 180B Medical Office Management for Coders Lab.

CRS 180B - Medical Office Management for Coders Lab (1)
Provides the opportunity to work in the lab environment to learn skills necessary to complete projects assigned in CRS 180A Medical Office Management for Coders. Requires group and one-on-one instructor time.

Prerequisite: CRS 102 Coding II with a grade of C or better. Corequisite: CRS 180A Medical Office Management for Coders.

CRS 211 - CPC/CMA Test Taking Strategies (1)
This course will help students to maximize their scores on their certifications examinations through the American Association of Medical Assistants and the American Association of Professional Coders.

CRS 270 - Medical Coding Practicum (2)

This course provides students 60 hours of actual coding observation and experience. Students will be placed in a medical office setting with working coding professionals to observe, assist, and become familiar with the working environment of their chosen profession. Placements will be in local healthcare facilities.

Prerequisite: Prerequisite: CRS 111 Coding II with a grade of C or better.

CSS - Crop & Soil Science

CSS 200 - Crops In Our Environment (3)

The class offers an introduction to the concepts of agricultural ecology and crop morphology. It serves as a foundation for other crop science classes. Examines the dynamics and function of crop communities, and the biotic and environmental interactions that influence crop productivity. Fundamentals of the developmental morphology of crop seeds, seedlings, and plants are covered as well as morphological features of seeds and plants in relation to the identification of crop families and species of economic importance.

CSS 205 - Soils: Sustainable Ecosystems (4)

Explores soil ecosystems as a medium, for plant and crop growth, the cycling of nutrients, supply and purification of water, and a habitat for diverse population of soil organisms. Also studies the relationship of human activities to the sustainability of soil ecosystems.

CSS 210 - Forage Crops (3)

Emphasizes practices that produce maximum economic returns for land devoted to hay, pasture or range. Includes establishment and management, fertilization, pest control, rotations, irrigations and renovation. Note: This is a professional technical course that may not be accepted by four-year institutions.

CSS 215 - Soil Nutrients and Plant Fertilization (3)

Introduces the essential soil nutrients and their use in agronomic and horticultural crops. Processes in soil nutrient supply and plant nutrient uptake are discussed. Students become familiar with common synthetic and organic fertilizers and soil amendments and learn how to apply fertilizers using various application methods. Environmentally sound use and holistic management of agricultural nutrients are emphasized.

CSS 240 - Pest Management (4)

An introduction to the classification, structure, growth, life cycles, recognition, and control principles of selected weeds, insects, disease, and other pests of plants. The principles and applications of Integrated Pest Management are emphasized.

CST - Construction Equipment

CST 112 - Employability Skills (3)
Focuses on communication skills, professional interactions, and appropriate workplace behavior. Covers job search techniques and builds on employability skills related to resume writing, job applications, employment tests, cover letters, mock interviews, and professional dress and grooming. Includes tailoring resume packages for specific job listings and employers.

CST 114 - Fundamental Shop Skills (3)
Provides practical working knowledge of safety in the trade areas of employment. Uses safety regulatory agencies as a foundation, and also includes forklift training. Includes online training specific to safety and pollution prevention.

Prerequisite: Placement into MTH 075 or higher.

CST 116 - Electrical & Electronic Systems (10)
Introduces the theory, application and diagnosis of the electrical and electronic control systems for modern vehicles. Places emphasis on batteries, starting, charging, lighting, accessories and driver information systems. Provides preparation for AED (association of equipment distributors) certification in electrical/electronic systems.

Prerequisite: Placement into MTH 075 higher.

CST 122 - Service and Repair (3)
Introduces students to service and repair in a structured shop environment.

Prerequisite: CST 114 or HVE 114. Corequisite: NA.

CST 126 - Steering, Suspension, and Brakes (10)
Introduces the theory and application of pneumatic brake systems. Covers service, diagnosis, and repair of ABS (anti-lock brake systems), and foundation, accessory, and safety of air systems. Also includes the theory and operation of heavy duty steering and suspension systems, automotive alignment, and brake systems. Covers diagnosis and service techniques, with the use of components and vehicles. Includes multi-media presentations, discussion research, and lab practice.

Prerequisite: Placement into MTH 075 or higher.

CST 136 - Powertrain Systems (10)
Covers power train terminology, theory and operation, driveshaft function and construction, maintenance practices, power train schematics, troubleshooting and failure analysis, and component rebuild and replacement. Includes use of electronic resources such as John Deere Service Advisor and CAT SIS technical manuals to perform required tasks.

Prerequisite: Placement into MTH 075 or higher.

CST 214 - Mobile Hydraulics (10)
Covers basic hydraulic theory and schematics. Introduces pumps, actuators, actuator applications, valve design, and hydraulic valve theory. Also covers advanced hydraulic theory, service and repair of the above listed components, connectors used in mobile equipment hydraulic systems, systems design, and OEM (original equipment manufacturer) modifications. Uses hydraulic schematics and theory of operation and addresses repair, adjustment, and troubleshooting of electronic controls. Addresses common customer concerns and solutions, specific to heavy equipment. OEM operational check-out procedures and laptop computer testing of heavy equipment will be performed in labs.

Prerequisite: Placement into MTH 075 or higher; and HVE 116 or CST 116 with a grade of C or better; and HVE 126 or CST 126 with a grade of C or better; and HVE 136 or CST 136 with a grade of C or better.

CST 224 - Heavy Equipment/Diesel Engines (10)
Covers the operating principles, maintenance, and repair of various types and sizes of diesel engines and high compression gas engines. Focuses on diesel engines, their component parts, and related accessories, from the perspective of troubleshooting. Examines the study of manufacturer's specifications as they pertain to correct engine operation, performance, and emissions.

Prerequisite: Placement into MTH 075 or higher; and HVE 214 or CST 214 with a grade of C or better.

CST 226 - Customer Service For Heavy Equipment Technicians (3)
Focuses on effective communication with internal and external customers. Emphasizes troubleshooting and project management methods that incorporate customer service skills coupled with communicating effectively with people from different social and cultural backgrounds. Includes job search skills for obtaining employment in the industry, as well as repair and design options that promote energy efficiency.

CST 234 - Diesel Engine Performance, Efficiency, and Ecology (10)
A capstone course. Introduces diesel tune-up and techniques for optimum engine performance, including diagnostic troubleshooting and engine break-in procedure through use of the dynamometer. Focuses on critical thinking skills covered in previous courses to solve real world problems on mechanical and computer managed engine and truck. Includes the ITS Diesel Club.

Prerequisite: Placement into MTH 075 higher; and HVE 214 or CST 214 with a grade of C or better.

CST 236 - Mobile Air Conditioning & Comfort Systems (3)
Introduces principles of mobile heating and air conditioning systems. Emphasizes design, function, adjustment, service, and testing of components.

Prerequisite: Placement into MTH 075 higher, and CST 116 Electrical and Electronic Systems with a grade of C or better.

DA5. - Dental Assistant

DA5. 453 - Dental Pathology/Pharmacology (2)

The study of oral pathology will cover the recognition of gross symptoms of oral disease, the treatment procedure and the prevention of oral disease to include the drugs and medications most commonly associated with treatment. An in-depth study of pathological diseases, normal and injured tissues, developmental anomalies, dental caries, abscesses and cysts will be discussed. Required: Acceptance into the Dental Assistant Program.

DA5. 461 - Dental Radiology I (3)

An introduction to the principles and hazards of radiation, exposing and processing films, visual identification of anatomical landmarks, operation of X-ray equipment, including safety factors for patient and operator. Required: Admission to the Dental Assistant Program.

DA5. 462 - Dental Radiology II (3)

A continuation of DA 5.461. An in-depth study of X-ray and patient considerations, increased skills including exposures of X-rays on mannequins and patients. Students will participate in exposing, processing and mounting dental radiographs. Other radiographic methods will include extraoral, panoramic, endodontic, pedodontic, occlusal and disto-oblique techniques. Required: Successful completion of DA 5.461 Dental Radiology I.

DA5. 463 - Dental Radiology III (3)
Covers advanced X-ray clinical application of dental radiographic procedures and skills proficiency for periapical and bitewing X-rays. Includes exposing radiographs on patients in the radiology labs. Places an emphasis on identification of errors and corrective techniques.

Prerequisite: DA5. 462 with a grade of C or better.

DA5. 484 - Dental Materials I (3)

An introduction to laboratory applications in the handling and manipulating of dental materials is designed to improve proficiency and efficiency at chairside procedures, emphasis on principles of physical and chemical properties of gypsum, impressions materials, waxes, custom trays and basic principles and asepsis of laboratory procedures, including fixed prosthetic materials and gold products. Precautions and safe handling of dental laboratory materials will be presented through use of Material Safety Data Sheets (MSDS). Required: Admission to the Dental Assistant Program.

DA5. 485 - Dental Materials II (3)
An introduction to the diverse materials used in the dental office. The physical and chemical properties of bases, adhesives, cements, anticario-genic agents, and restorative materials in reference to manipulation and usage. Precautions and safe handling of dental materials will be presented through the use of Material Safety Data Sheets (MSDS). Required: Successful completion of DA5. 484 (p. 146) Dental Materials I.

Prerequisite: Successful completion of DA5. 484 Dental Materials I.

DA5. 488 - Expanded Duties I (3)
A study of procedures beyond the scope of general chairside assisting. The Oregon Dental Practice Act allows for instruction in placement and removal of matrix retainers, placement of temporary restorations, coronal polishing and fluoride treatments, and methods of fitting

and adjusting permanent crowns. Also includes techniques to acquire skills for placing and removing rubber dams, taking alginate impressions, and taking bit registrations for study model articulation. Emphasis is on patient care and post operative instructions. Required: Acceptance into the Dental Assistant Program.

Prerequisite: Acceptance into the Dental Assistant Program.

DA5. 489 - Expanded Duties II (2)
A continuation of DA5. 488. Completes the remaining expanded function duties that are approved by the Oregon Dental Practice Act. Provides in-depth study with major emphasis on student practical application and fabrication of temporary crowns, cement removal techniques, placement of temporary soft denture relines, pit and fissure sealants, and amalgam polishing. Covers use of correct hand and motion techniques, selection of armamentarium, recognition of polishable amalgam restorations, and safety precautions for patient comfort are emphasized. Required: Successful completion of DA5. 488 Expanded Duties I.

Prerequisite: DA5. 488 with a grade of C or better.

DA5. 491 - Dental Office Records (2)
Covers basic office principles as related to their application in a dental office. Addresses patient reception, communication, and telephone techniques, appointment scheduling, office record maintenance, financial arrangements and coordination. Covers purchasing and supply control, management of office equipment, scheduling of meetings/conferences and preparing written communications. Emphasizes billing insurance companies, collection procedures and computerized billing systems are covered in depth.

Prerequisite: Required: Successful completion of Dental Assistant Program winter term.

DA5. 492 - Dental Office Emergencies (2)
Provides in-depth level with various emergency situations that may occur in a dental office and the primary first aid choice. Discusses the signs and symptoms of medical emergency, the equipment, treatments and drugs are discussed. Emphasizes the responsibility of the dental team to be prepared for an emergency.

Prerequisite: Required: Successful completion of Dental Assistant Program winter term.

DA5. 494 - Introduction to Dentistry (3)

An introduction to clinical dentistry. Emphasis is placed on dental health team members, historical developments, introductory terminology, office communications, ethics and jurisprudence, dental practice acts, work ethics and patient management. Treatment room preparation, health history data collection, dental equipment identification, aesepsis and disinfection, preset trays, operator positioning, basic instruments, instrument transfer, oral charting, general office routine, productivity, marketing and performance appraisals are covered in detail. A brief introduction to dental specialties will be presented to include all aspects of dental care available to the public. Required: Admission to Dental Assisting program.

DA5. 495 - Clinical Practice (3)

A continuation of DA5. 494 Introduction to Dentistry. Principles of operative dentistry and fixed prosthetics are covered in detail. The order of procedure, hand and rotary instrumentation, anesthesia, handpieces, isolation and control of the operative field and post operative instructions are emphasized.

DA5. 496 - Dental Specialties (3)

Dental Specialties, role of dental auxiliaries, specialized instrumentation, materials and equipment will be encompassed to demonstrate a thorough knowledge of the following Dental Specialty Practices: Endodontics, Pedodontics, Prosthodontics, Periodontics, Oral Surgery, Orthodontics and Implant Surgery. Didactic and laboratory segments provide an understanding of the purpose and function of specialty practices, common procedures and how they interact with general practices.

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DA5. 497 - Dental Health Education And Nutrition (2)

Development of concepts and principles of plaque related diseases, fluoride therapy, brushing and flossing techniques, patient education, including oral hygiene, preventative dentistry, and motivational techniques. In addition nutritional information applied to good oral health, including the food pyramid, nutrients, food diaries, and nutritional deficiencies as they relate to dental conditions. Basic principles of prevention of oral disease through patient and public education are stressed. Student community projects emphasize the principles of communication and preventative dentistry. Required: Successful completion of Dental Assistant Program winter term.

DA5. 500 - Dental Anatomy & Histology (2)

An in-depth study of dental terminology as it relates to normal anatomy, physiology and histology of the teeth and associated structures, their embryological development and histological characteristics, the function of oral structures. The universal numbering system for individual teeth is used in extensive detail, surfaces and comparison of similarities and differences of all teeth. Required: Acceptance to the Dental Assistant program.

DA5. 501 - Infection Control/Sterilization (2)

An in-depth study of principles in dental infection control, decontamination, disinfection and sterilization. This course will provide basic requirements for OSHA's blood borne pathogens, hazard communication and general safety standards in a dental environment, and includes sterilization principles, machines and techniques. Students will be eligible to take the infection control examination (ICE) administered by the Dental Assisting National Board (DANB) upon successful completion of this course. Required: Acceptance to the Dental Assistant program.

DA5. 502 - Basic Science For Dentistry (2)

This course will provide a generalized overview of basic science as it relates to normal anatomy and physiology of the body and associated structures. Basic principles and terminology will be used to assist the student with the more detailed studies of oral anatomy/pathology. Focus will be on location, structure and function of the body with more integrated detail in landmarks, anatomy and physiology of the head and neck area. Required: Acceptance to the Dental Assistant program.

DA5. 510 - Office Practicum (9)

Provides work experience placing practical application of all clinical skills in community dental offices. Requires a total of 300 hours in two separate general dentistry offices. Emphasizes an individual's ability to work in a dental health team setting with minimal direction.

Prerequisite: Required: Successful completion of Dental Assistant Program Spring Term.

DA5. 515 - Office Practicum Seminar (2)

A series of weekly seminars in which students share work related experiences with the instructor and peers. Information regarding employment, skills improvement, job applications, resume formats and interviewing techniques are covered as well as preliminary reviewing and testing for the national certification examination. Required: Successful completion of Dental Assistant Program spring term.

DA5. 550 - Human Relations In Dentistry (3)

An introduction to human relations as they pertain to success in a dental setting (as well as personal lives) utilizing methods of dealing with stress, motivation, behavioral management and problem solving for personal growth. In addition, social perception, emotions and historical elements of psychology of interpersonal relationships, including self-concept, emotion, gender, culture and cultural diversity issues of everyday living will be addressed. This course will aid in developing patient/customer service skills through team participation and communication in respect to professional/personal encounters affecting work values, ethics and leadership skills. Required: Successful completion of Dental Assistant Program winter term.

DI - Diagnostic Imaging

DI 100 - Comprehensive Patient Care (3)

Content provides the concepts of optimal patient care, including consideration for the physical and psychological needs of the patient and family. Routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions. The role of the radiographer in patient education is identified as the content provides an overview of the foundations of radiography and the practitioner's role in the health care delivery system. Content provides a foundation in ethics and law related to the practice of medical imaging. Students will examine a variety of ethical and legal issues found in clinical practice. An understanding of the role of effective communication is stressed. Cultural competence is emphasized.

DI 110 - Radiographic Proc-Chest/Abd (3)

Content provides the knowledge base necessary to perform standard imaging procedures and special studies. Consideration is given to the evaluation of optimal diagnostic images. Establishes a knowledge base in anatomy and physiology. Content provides a basis for analyzing radiographic images to Include the importance of optimal imaging standards, discussion of a problem-solving techniques for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. Understanding radiographic orders and diagnostic report interpretation are essential components. Critical thinking and cultural competence is incorporated into multiple content areas. The first course in a series of three.

DI 111 - Rad Proc-Extremities & Spine (6)
Content provides the knowledge base necessary to perform standard imaging procedures and special studies. Consideration is given to the evaluation of optimal diagnostic images. Establishes a knowledge base in anatomy and physiology. Content provides a basis for analyzing radiographic images to Include the importance of optimal imaging standards, discussion of a problem-solving techniques for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. Understanding radiographic orders and diagnostic report interpretation are essential components. Critical thinking and cultural competence is incorporated into multiple content areas. The second course in a series of three.

DI 112 - Radiographic Proc: Skull & Review (5)
The third course in a three-course series. Provides the knowledge base necessary to perform standard imaging procedures and special studies. Gives consideration to the evaluation of optimal diagnostic images. Establishes a knowledge base in anatomy and physiology and provides a basis for analyzing radiographic images to include the importance of optimal imaging standards, discussion of a problem-solving techniques for image evaluation, and the factors that can affect image quality. Includes actual images for analysis and essential components such as understanding radiographic orders and diagnostic report interpretation. Incorporates critical thinking and cultural competence into multiple content areas.

DI 113 - Radiographic Proc: Fluoroscopy (5)
Provides the knowledge base necessary to perform standard fluoroscopic imaging procedures and fluoroscopic special studies. Gives consideration to evaluation of optimal diagnostic images and the analyzing of fluoroscopic radiographic images. Includes the importance of optimal imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Uses actual images for analysis. Incorporates critical thinking and cultural competence into multiple content areas. Provides a hands on opportunity to practice positioning and exam skills through the lab component.

DI 120 - Exposure I - Production (3)

Content establishes a basic knowledge of atomic structure and terminology. Also presented are the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. Imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Establishes a knowledge base in radiographic equipment design. Establishes a knowledge base in factors that govern the image production process. Critical thinking is incorporated into multiple content areas. The first course in a series of three.

DI 121 - Exposure II (3)

Content establishes a basic knowledge of the nature and characteristics of radiation, x-ray production. Imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented.

Establishes a knowledge base in radiographic, fluoroscopic and mobile equipment requirements and design. Establishes a knowledge base in factors that govern the image production process. The content also provides a basic knowledge of quality control. Critical thinking is incorporated into multiple content areas. The second course in a series of three.

DI 122 - Exposure III: Digital Imaging (2)

Content establishes a basic knowledge of the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. Imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented. Establishes a knowledge base in radiographic, fluoroscopic and mobile equipment requirements and design. Establishes a knowledge base in factors that govern the image production process. The content also provides a basic knowledge of quality control. Critical thinking is incorporated into multiple content areas. The third course in a series of three.

DI 130 - Pharmacology for Imaging (2)

Content provides basic concepts of pharmacology, venipuncture and administration of diagnostic contrast agents and intravenous medications. The appropriate delivery of patient care during these procedures is emphasized. Critical thinking is emphasized.

DI 140 - Radiation Protection (3)

Content presents an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are incorporated. Critical thinking is incorporated into multiple content areas.

DI 141 - Radiation Biology (3)

Content provides an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation. Critical thinking is incorporated into multiple content areas.

DI 200 - Radiographic Comp Review I (1)

Content provides a review of all knowledge, skills, and instruction provided in all other Diagnostic Imaging courses. Course is designed to help students prepare to take the ARRT examination upon completion of all coursework. Job search skills are incorporated into content. The first course in a series of two.

DI 201 - Radiographic Comp Review II (1)

Content provides a review of all knowledge, skills, and instruction provided in all other Diagnostic Imaging courses. Course is designed to help students prepare to take the ARRT examination upon completion of all coursework. Test taking strategies are incorporated into content. Perform a job search. The second course in a series of two.

DI 210 - Clinical Externship I (11)

Externship experiences designed to develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development. Specific activities include: patient care and assessment, competent performance of radiologic imaging and total quality management. Critical thinking and cultural competence is emphasized. The first course in a series of four.

DI 211 - Clinical Externship II (11)

Externship experiences designed to develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development. Specific activities include: patient care and assessment, competent performance of radiologic imaging and total quality management. Critical thinking and cultural competence are emphasized. The second course in a series of four.

DI 212 - Clinical Externship III (11)

Externship experiences designed to develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development. Specific activities include: patient care and assessment, competent performance of radiologic imaging and total quality management. Critical thinking and cultural competence is emphasized. The third course in a series of four.

DI 213 - Clinical Externship IV (11)

Externship experiences designed to develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development. Specific activities include: patient care and assessment, competent performance of radiologic imaging and total quality management. Critical thinking and cultural competence is emphasized. The last course in a series of four.

DI 220 - Radiographic Pathology (1)

Provides an overview of common pathological conditions encountered in the clinical setting. Categorizes pathology by body systems. Covers the pathology as they relate to: signs and symptoms, etiology, imaging diagnosis and prognosis and treatment. Introduces concepts related to disease and etiological considerations with emphasis on radiographic appearance of disease and impact on exposure factor selection, as well as cross-sectional anatomy. Emphasizes critical thinking.

DI 230 - Basic Prin Computed Tomography (1)

Content is designed to provide entry-level radiography students with an introduction to and basic understanding of the operation of a computed tomography (CT) device. Content is not intended to result in clinical competency. Critical thinking is emphasized.

DI 231 - Interventional Lab Fundamentals (1)
Content is designed to provide entry-level radiography students with an introduction to, and basic understanding of, the cardiac catheter lab environment. Content is not intended to result in clinical competency. Critical thinking is emphasized.

EC - Economics

EC 115 - Outline of Economics (4)
Provides an overview of micro- and macroeconomics. The U.S. economic system is discussed from both national and individual perspectives. Discusses topics such as supply and demand, national accounting, monetary policy, fiscal policy, productivity, market models, income, wealth and taxation.

EC 201Z - Principles of Microeconomics (4)
Examines how consumers and firms make choices when facing scarce resources, and how those choices are related to government policy and market outcomes, such as prices and output.

Prerequisite: Prerequisite: MTH 095 Intermediate Algebra with a grade of C or better.

EC 202Z - Principles of Macroeconomics (4)
Examines the aggregate activity of a market economy, economic growth, inflation, unemployment, and the use of fiscal and monetary policy to address macroeconomic problems.

Prerequisite: Prerequisite: MTH 095 Intermediate Algebra with a grade of C or better.

EC 215 - Economic Development in the U.S. (4)

Provides historical study and understanding of the sources of economic growth and change in the United States. Discussions about how changes in industry, agriculture, commerce, transportation, labor, and finance have affected the speed of change of the American lifestyles and the increased economic well-being of society.

EC 220 - Contemporary U.S. Economic Issues: Discrimination (3)
Focuses on discrimination in the U.S. and its impact within our market economy. Primary focus is inequities for women and minorities in the labor market.

ED - Education

ED 101 - Observation and Guidance (4)
An introductory practicum experience focusing on building relationships with young children in early

education settings. Students interact with children individually and in small groups, while working with an assigned mentor teacher. Students spend 6 hours per week in an approved early child care setting and 2 hours per week in seminar.

Prerequisite: Prerequisite: HDFS 248 and ED 152, both with a grade of C or better. Required: Students must successfully complete a criminal history background check prior to starting class.

ED 101A - Introduction to Education: Practicum and Seminar (3)
Includes observation of children and teachers in an elementary or secondary classroom setting. College students assist the teacher as appropriate and spend six hours each week in the classroom and one hour each week in seminar. Appropriate for students with limited prior experience with children or in a structured teaching setting. Must be arranged one term in advance. Required: Students who enroll in ED 101A Practicum and Seminar are required to submit proof they meet Oregon measles immunization requirements for community college education practicums. Students can also claim a medical or a nonmedical exemption due to personal, religious or philosophical reasons by submitting the Oregon Health Authority required documents. Recommended: ED 216 Purpose, Structure, and Function of Education in a Democracy or HDFS 225 Infant and Child Development before taking this class. This course is repeatable for credit.

ED 102 - Education Experience (4)
Students will focus on how environments, teacher interactions, and curriculum influence learning. Students will plan, present and assess developmentally appropriate learning experiences for young children. Students will spend 6 hours per week in an approved early education practicum setting and 2 hours per week in seminar. Must be arranged one term in advance. Recommended: HDFS 225 Child Development or HDFS 248 Learning Experiences for Children, or ED 152 Creative activities/Dramatic Play, or ED 179 Literature, Science and Math, or ED7. 730 Early Childhood Ages and Stages.

Prerequisite: Prerequisite: ED 101 Observation and Guidance with a grade of C or better. Required: Successful completion of a criminal history background check prior to starting class. .

ED 103 - Extended Education Experience (4)
Field experience in an early education setting with young children. Students apply in-depth knowledge, methods and skills gained from education courses. Includes one half-day and one full-day teaching experience. Students will spend 9 hours per week in an approved early education practicum setting and 1 hour per week in seminar. Recommended: HDFS 225 Child Development, ED 110 Principles of Observation, HDFS 248 Learning Experiences for Children, ED 152 Creative Activities/Dramatic Play or ED 179 Literature, Science and Math.

Prerequisite: Prerequisite: ED 102 Education Practicum with a grade of C or better.

ED 110 - Principles Of Observation (3)
Observe children in a classroom or child care environment using a variety of techniques. Focuses on using information gathered from observation to draw conclusions about children's typical development and plan appropriate curriculum activities.

ED 125 - Job Search Skills (1)
Learn how to search for work in the field of child and family studies. Develop your resume, letter of application and professional skills for successful employment.

ED 131 - Positive Guidance: Young Child (3)
Focuses on understanding and guiding behavior of young children (ages 0-8 years) in child care settings. Students look at the research supporting guidance practices, develop criteria for selection of strategies, evaluate popular guidance techniques and develop a toolbox of strategies that promote the healthy development of young children.

ED 152 - Creativity & the Arts (3)
Focuses on understanding and implementing a developmental approach to creative activities for young children. Involves hands-on experience with a wide variety of activities and mediums. Includes methods of presentation, observation, evaluation and child assessment. Emphasizes art, music and movement, dramatics, and creative play.

Prerequisite: Required: Successful completion of a criminal history background check prior to starting class.

ED 163 - Infant Toddler Development and Group Care (3)
Focuses on how to design environments which support healthy development for infants and toddlers in group care settings. This course includes an exploration of four developmental domains: physical, social-emotional, cognitive and language development. There is an emphasis on cultural identity, collaborating with parents and working with children with special needs.

ED 179 - Literacy, Science & Math (3)
Focuses on understanding and creating appropriate curricula for young children. Involves hands-on experience with a wide variety of activities in literacy, science, and math. Includes planning, implementing, and evaluating learning experiences for young children. Required: Students must have negative TB test and measles immunization.

ED 216 - Purpose/Structure/Function (3)
Examines the system of education in a democratic society - past, present, and future. Historical, social, philosophical, political, legal and economic foundations of education in Oregon, the USA, and other countries provides a framework for analyzing contemporary educational issues in schools, communities, and workplaces.

ED 219 - Social Justice, Civil Rights & Multiculturalism in Education (3)
Covers examination of equity and injustice based on social groupings such as race, gender, language, and ability. Discusses equitable approaches and power in systems and institutions of society (e.g., schooling, curriculum, educational policy) and how to actively make change. Reviews contemplation of multiculturalism and personal experiences through a wholeness approach.

ED 222 - Constructive Discipline (3)
Focuses on supporting children's healthy social-emotional development to develop friendships, interact with teachers, and meet classroom expectations in developmentally appropriate ways. Students will explore the meaning of children's behavior. They will practice with social-emotional strategies which support emotional literacy and the management of big emotions. Students will develop behavior plans for teaching children new behavioral skills and supporting children with challenging behaviors.

ED 224 - Creative Drama for Teachers (3)
Introduces the skills of adapting lesson plans and embedding drama while connecting to course content from a variety of disciplines. Includes the use of simple strategies and engagement in the creative process to meet the needs of diverse learners.

ED 252 - Behavior Management (3)

Presents the principles of behavior management in order to maximize instructional potential. Attention is given to individual differences, developmental issues, learning and personality styles, and to positive communication techniques designed to develop prosocial competence.

ED 253 - Learning Across The Lifespan (3)

This course will explore how learning occurs at all ages from early childhood through adulthood. Students will consider the evolution of major and emerging learning theories over time, the interrelation between biology, psychology and social forces, and their application to human development. Focus will be on individual learning styles, including one's own, reflection on the implications of learning, and the impact of these issues on the development and delivery of instruction.

ED 280A - CWE ELEMENTARY EDUCATION (1 TO 12)

Structured field experience in a teaching and learning setting. Working with a master teacher, students learn current educational strategies and techniques. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Credits are based on identified objectives and number of hours worked. This is a supervised work experience that must be approved by the CWE coordinator prior to enrolling in the class. May be repeated for a maximum of 24 credits.

ED 280C - CWE MIDDLE/SECONDARY EDUCATION (1 TO 12)

Structured field experience in a teaching and learning setting. Working with a master teacher, students learn current educational strategies and techniques. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Credits are based on identified objectives and number of hours worked. This is a supervised work experience that must be approved by the CWE coordinator prior to enrolling in the class. May be repeated for a maximum of 24 credits.

ED 282 - Working w/Child w/Special Need (3)

Overview of special education legislation and the role of family, school and community in educating and supporting individuals with disabilities. Class is tailored to meet the needs of students who enroll, with a focus on in-school special needs issues or community agency issues.

Implementation of current legislation and its impact in the classroom are addressed.

EG4. - Engineering Graphics

EG4. 409 - Drafting Fundamentals (3)
Introduces skills needed to produce 2-D mechanical drawings using hand sketching techniques. Includes orthographic projection, lettering, auxiliary views, sections and pictorial drawings. Covers dimensioning basics. Audit available.

EG4. 411 - Orientation to CAD (2)
Introduces sketching and rendering drawings. Covers fundamentals of technical report writing, memos, and resume development with instruction relating to sentence structure, paragraph and essay development, and written expression. Includes internet research of technical products related to drafting and design, and American National Standards Institute drafting practices and terminology. Introduces file systems and learning management systems using Windows and LBCC specific protocols.

Corequisite: Corequisite: EG4. 409 Drafting I.

EG4. 412 - Introduction to Inventor (3)
Introduces Inventor as a feature-rich, parametric 3D design tool for assembly-centric modeling and collaborative engineering. Includes part and assembly modeling, using adaptive features and parents, utilizing work groups, surfacing basics, managing data, and the Engineer's Notebook. Audit available.

EG4. 414 - Introduction to Fusion 360 (3)
Introduces Autodesk's Fusion 360 cross platform cloud-based CAD tool for product development, and industrial and mechanical design. Includes instruction for parametric part and assembly modeling, model sculpting, and 2D drawing creation. Audit available.

EG4. 419 - Fundamentals of Product Design and Development (3)
Covers practical application of industry standard product development process(es) and associated tools, while practicing human relations techniques to resolve team conflicts.

Prerequisite: EG4. 409 Drafting Fundamentals and EG4. 421 Introduction to AutoCAD, with a C or better, or Instructor Approval.

EG4. 421 - Introduction to AutoCAD (4)
Introduces Autodesk's AutoCAD software as a design and drafting tool. Introduces basic 2D CAD commands, command interface, workspace, viewports and printing concepts. Covers creation, retrieval and modification of 2D drawing files that meet industry standards with an emphasis on mechanical design for the manufacturing industry. Audit available. Required: Proficiency in computer operations using Microsoft Windows.

EG4. 423 - Architectural Design 1 (4)
Introduces Revit Architecture and its applications to architectural design and drafting. Introduces basic architectural drafting techniques and methods. Covers the fundamental concepts of residential building design with identification and use of professional architectural standards used in residential building drawings. Includes architectural symbols and construction methods used in residential and light commercial buildings. Audit available.

EG4. 442 - Digital Design and Fabrication Fundamentals (3)
Introduces skills needed to set up, operate, and maintain rapid prototyping/3D printers, including FDM, SLA, etc. Introduces the set-up and operation of laser cutting and engraving tools used in product manufacturing as well as different materials used in production. Introduces the set-up and operation of a Computer Numeric Control (CNC) router to manufacture a simple project. Introduces computer aided manufacturing (CAM) for creating 2D and 2.5D tool paths. Audit available.

Prerequisite: Prerequisite: EG4. 412 Introduction to Inventor or EG4. 451 Solids I with a grade of C or better.

EG4. 443 - Schematics (3)
Covers piping, plumbing schematic diagrams, and pictorial layouts. Includes piping, plumbing and Heating, Ventilation and Air Conditioning (HVAC) standards and practices. Audit available.

Prerequisite: EG4. 421 CAD II with a grade of C or better.

EG4. 445 - Plane Surveying (3)
A basic course in surveying. Includes distance measuring, leveling, cross sectioning, traversing, topographic surveying, use of survey instruments, and office procedures. Audit available.

Prerequisite: EG4. 456 Civil Drafting Lab with a grade of C or better.

EG4. 451 - Solids I (3)
Introduction to Solid Modeling basics. Covers steps from sketching to extrusion, assemblies, part documentation and 3D printing.

Prerequisite: Prerequisite: EG4. 409 Drafting Fundamentals with a grade of C or better.

EG4. 452 - Solids II (3)
Continuation of Solids I. Covers Sheet Metal and Surface Modeling, creating more complicated individual parts, digitally create assemblies using 3D printed parts designed by student as well as incorporating purchased parts such as nuts, bolts, screws, springs, etc. Students will work in teams, as well as individually, in the process of creating design solutions to a given problem, designing and printing assemblies as well as documenting the process.

Prerequisite: Prerequisite: EG4. 409 Drafting Fundamentals, EG4. 451 Solids I and GS 104 Physical Science: Principles of Physics with a grade of C or better.

EG4. 455 - Structural Drafting (3)
Introduces structural drafting. Emphasizes framing plans, connections, fabrication details, foundation drawings, and other drawings required for structural steel, precast concrete, and poured-in-place concrete drawings. Audit available.

Prerequisite: EG4. 456 Civil Drafting Lab with a grade of C or better.

EG4. 456 - Civil Drafting Lab (1)
A lab course covering basic civil drafting techniques. Covers basic civil drafting techniques. Includes drafting survey maps, plats, plan and profile, and topo maps. Audit available.

Prerequisite: EG4. 421 CAD II with a grade of C or better.

EG4. 458 - Mechanical Design Drafting (4)
Covers mechanical drafting with a focus on the development of 3D feature-based parametric part and assembly models for creation of technical mechanical drawings. Includes threads and fasteners, weldments and welding symbols, sheet metal, surface finishes, coatings, platings, and tolerances.

EG4. 459 - Kinematics Drafting (3)
Introduces mechanisms that translate motion and force, including cams, gears, belts/pulleys, and chains/sprockets. Emphasizes the use of CAD software for simple mechanical part drawings, expanding into process flow diagrams and electrical diagrams. Introduces components such as ratchet pawls, linkages, and levers. Covers the creation of drawings for stock (shelf) items and custom designs. Audit available

Prerequisite: EG4. 421 Introduction to AutoCAD and MA3. 427 Introduction to SolidWorks with a C or better.

EG4. 460 - AutoCAD (4)
Introductory course, covering AutoCAD basics, 2D part layout and proper documentation.

EG4. 462 - Advanced Inventor (3)
Covers advanced techniques used in creating and modifying parametric, assembly-centric 3D models with Inventor. Develops extensive knowledge in the areas of part and assembly modeling, adaptive features, utilizing work groups, surfacing, managing data and the Engineer's Notebook.

Prerequisite: EG4. 412 Introduction to Inventor with a grade of C or better.

EG4. 463 - Architectural Design II (3)
Covers intermediate residential design principles including design of floor plans, elevations, 3-D presentation and working drawings using advanced 3-D architectural software. Audit available.

Prerequisite: EG4. 423 Architectural Design I with a grade of C or better.

EG4. 464 - Advanced Fusion 360 (3)
Covers advanced techniques used in creating and modifying parametric, assembly-centric 3D models with Fusion 360. Develops extensive knowledge in the areas of part and assembly modeling, adaptive features, utilizing work groups, surfacing, managing data and the Engineers Notebook.

Prerequisite: EG4. 414 Introduction to Fusion 360 with a grade of C or better.

EG4. 465 - Civil Drafting II (3)
Covers advanced topics in surveying and civil engineering drafting/design. Includes an introduction to Civil 3D. Audit available.

Prerequisite: CEM 263 Plane Surveying or EG4. 445 Plane Surveying and EG4. 456 Civil Drafting Lab, all with a grade of C or better.

EG4. 471 - Capstone Project (3)
Provides the student an opportunity to apply all previously acquired knowledge in the design of a new or existing consumer product or project. Students will study the design processes with consideration given to the function, aesthetics, cost economics and marketability of the product or project. A research paper and product illustration is required in this course.

ENG - English

ENG 102 - Introduction to Global Young Adult Literature (3)
Interprets works of global young adult literature within their cultural contexts, including varying definitions of adolescence. Employs critical methods to analyze

literature and identify its historical, cultural, and social influences.

ENG 104Z - Introduction to Fiction (4)
The study of fiction invites us to enter imaginative narratives and confront the challenges of being human. ENG 104Z provides opportunities for the appreciation of fiction, including deeper awareness of craft and insight into how reading fiction can lead to self-enrichment. Students read a variety of types of fiction, from diverse perspectives and eras, and develop their skills in discussion, literary analysis, and critical thinking. Recommended: College level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

ENG 106Z - Introduction to Poetry (4)
The study of poetry invites us to delve into the biggest questions about life and culture alongside the seemingly smallest issues of words and sounds. ENG 106Z provides opportunities for the appreciation of poetry, including deeper awareness of craft and insight into how reading poetry can lead to self-enrichment. Students read a variety of types of poetry and poetic forms, from diverse perspectives and eras, and develop their skills in discussion, literary analysis, and critical thinking. Recommended: College level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

ENG 145 - Introduction to Film Studies, 1968-1999 (3)
Explores American and European cinema from 1968 to 1999. Emphasizes important films and filmmakers of the era, as well as key events in American and European cultural history. Recommended: College-level reading and writing skills are strongly recommended for success in this course.

ENG 201 - Shakespeare (4)

Studies major plays of Shakespeare, including the structure, characterization, setting and imagery employed in selected comedies, tragedies, histories and poems.

Note: Meets the pre-1800s program requirement. Need not be taken in sequential order. Recommended: College-level reading and writing skills (WR 121) are strongly recommended for success in this course.

ENG 202 - Shakespeare (4)

Studies major plays of Shakespeare, including the structure, characterization, setting and imagery employed in selected comedies, tragedies, histories and poems.

Note: Meets the pre-1800s program requirement. Need not be taken in sequential order. Recommended: College-level reading and writing skills (WR 121) are strongly recommended for success in this course.

ENG 204 - British Literature: Early (4)
Studies representative works in English literature for their inherent worth and for their reflection of the times in which they were written. Meets the pre-1800s program requirement. Recommended: Completion of WR 121Z Composition I or equivalent, ENG 104 Literature: Fiction, or ENG 106 Literature: Poetry.

Note: ENG 204, ENG 205 and ENG 206 need not be taken in sequence.

ENG 205 - British Literature: Middle (4)
Studies representative works in English literature for their inherent worth and for their reflection of the times in which they were written. Recommended: Completion of WR 121Z Composition I or equivalent, ENG 104 Literature: Fiction, or ENG 106 Literature: Poetry.

Note: ENG 204, ENG 205 and ENG 206 need not be taken in sequence.

ENG 206 - British Literature: Modern (4)
Studies representative works in English literature for their inherent worth and for their reflection of the times in which they were written. Recommended: Completion of WR 121Z Composition I or equivalent, ENG 104 Literature: Fiction, or ENG 106 Literature: Poetry.

Note: ENG 204, ENG 205 and ENG 206 need not be taken in sequence.

ENG 207 - World Literature: Asia (4)
Surveys ancient and modern literature from India, China, Japan, and other regions of Asia. Recommended: Completion of WR 121Z Composition I or equivalent.

Note: ENG 207, ENG 208 and ENG 209 need not be taken in sequence.

ENG 208 - World Literature: Africa (4)
Explores literary works of African writers from tribal, colonial and post-colonial eras. Recommended: Completion of WR 121Z Composition I or equivalent, and ENG 104.

Note: ENG 207, ENG 208 and ENG 209 need not be taken in sequence.

ENG 209 - World Lit: Non-Western Lit of the Americas (4)
Surveys American literature, analyzing works by writers from North, Central, and South America and the Caribbean, from prior to the European Contact through

the modern period. Recommended: Completion of WR 121Z Composition I or equivalent.

Note: ENG 207, ENG 208 and ENG 209 need not be taken in sequence.

ENG 215 - Latina/o/x Literature (3)
Examines the evolution of Latina/o/x literature in the United States beginning in the mid 16th century, including the original contact between European and pre-Columbian societies. The class explores thematic issues that have influenced and shaped the literature of Latina/o/x writers, as well as students' own perceptions of Latina/o/x culture. Readings may include works of history, memoirs, letters and essays, as well as fiction, poetry and drama by U.S. born Latino/Chicano authors such as Richard Rodriguez, Sandra Cisneros and Luis Valdez. Recommended: WR 121Z Composition I.

ENG 220 - Difference, Power, and Oppression in American Literature (4)
Explores the writings of cultures in America that have often been underrepresented in traditional literature courses. Studies literary works that explore issues of difference, disempowerment, and/or oppression--issues that are integral to understanding and appreciating American literature's vibrancy and the nation's history more broadly. Recommended: College-level reading; WR 121Z Composition I; and ENG 104 Literature Fiction or ENG 106 Literature: Poetry is strongly recommended for success in this course.

ENG 221 - Children's Literature (4)
Designed for students who have an interest in children's literature and for students who are pursuing a professional path working with children. Focuses on analysis, interpretation, evaluation, and reader response. Studies both picture books and chapter books in various genres.

ENG 223 - Difference, Power, and Oppression in American Film (4)
Explores cinematic representations of difference, power, and/or oppression in American film. Specific themes may change each term to highlight a particular topic, genre, director, or historical period.

Prerequisite: WR 121Z with a grade of C or better.

ENG 253 - American Literature: Early (4)

American Literature beginnings to 1865 focuses on major early movements in American Lit including Native American literature, the African American vernacular (songs and tales) and slave narratives. European exploration writings, the writings of Colonial America (1620-1776), the Literature of the New Republic (1776-1836) and the Literature of the American Renaissance (1836-1865). Emphasis will be on the historical, social, and philosophical backgrounds. ENG 253 provides an understanding of and appreciation for American culture as expressed in literature. Recommended: College-level reading; WR 121Z Composition I; and ENG 104 Literature Fiction or ENG 106 Literature: Poetry is strongly recommended for success in this course.

ENG 254 - American Literature: Modern (4)
Focuses on a century and a half of fiction, poetry, drama, and essays (The Literature of an Expanding Nation: 1865-1912, The Literature of a New Century: 1912-1946 and The Literature Since Mid-Century: 1945-Present). Questions how American Literature has been defined and how those definitions have been challenged and changed over the last century. Emphasis on long recognized major authors as well as minority ones. Exploration of the literature in relation to literary and historical movements as well as on its own merit. ENG 254 provides an understanding of and appreciation for American culture as expressed in literature. Recommended: College-level reading; WR 121Z Composition I; and ENG 104 Literature: Fiction or ENG 106 Literature: Poetry is strongly recommended for success in this course.

ENG 257 - African American Literature (4)
Studies representative literary works by African American writers. Focuses on African American culture and traditions and their contributions to the diversity and significance of American literature. Recommended: Completion of WR 121Z Composition I or equivalent.

ENG 261 - Science Fiction (3)

Explores science fiction, fantasy and speculative futures through popular fiction. Discusses content, styles, techniques and conventions of the genre. Recommended: College-level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

ENGR - Engineering

ENGR 100 - Orientation to Engineering (3)
Students are introduced to engineering as a career, the different engineering majors, and the professional practices and ethical conduct required by the engineering profession. Students will practice working collaboratively as a team to analyze engineering problems and effectively communicate solutions. The focus will be on preparing

students for engineering, describing what engineering is, and identifying skills and resources which will enable the student to be successful in their chosen engineering major and future career.

ENGR 102 - Design Thinking and Problem Solving (4)
This class covers the design process, you will work with a team to create designs to solve engineering problems. You will work with your team to assess the appropriate stakeholder needs and identify and define the design problem, brainstorm and choose a design concept, create a schedule of key benchmarks in the design process, use analytical tools to iteratively solve the problem, and present your findings.

Prerequisite: Prerequisite: MTH 111Z Precaclulus I: Functions with a grade of C or better.

ENGR 103 - Engineering Computation and Algorithmic Thinking (4)
This course explores fundamental computational concepts and practices with algorithmic thinking. Focuses on problem solving skills, algorithm design, debugging, and writing computer programs. Explores computation through an application of engineering topics.

Prerequisite: Prerequisite: MTH 112Z Precalculus II: Trigonometry with a grade of C or better.

ENGR 111 - Engineering Orientation I (4)
Covers engineering as a profession, historical development, ethics, curricula and engineering careers. Introduces design, problem analysis and solution, and the general skills necessary for success in the Engineering program.

ENGR 112 - Engineering Orientation II (4)
Covers systematic approaches to problem solving using the computer. Includes logic analysis, flow charting, input/output design, introductory computer programming, and the use of engineering software.

Prerequisite: Prerequisite: Math 111Z Precalculus I: Functions with a grade of C or better.

ENGR 201 - Electrical Fundamentals: DC Circuits (4)

Covers fundamentals of circuit analysis, including node and mesh analysis, superposition, and Thevenin and Norton's Theorem. Introduces op-amps, capacitors and inductors.

Prerequisite: Prerequisite: MTH 251Z Differential Calculus with a grade of C or better.

ENGR 202 - Electrical Fund: AC Circuits (4)

Covers AC circuit analysis techniques and sinusoidal steady state and analysis of three-phase circuits. Introduces mutual inductance and transformers. Covers resonant circuits and investigates filters, and continues to look at op-amp circuits.

Prerequisite: Prerequisite: ENGR 201 Electrical Fundamentals: DC Circuits with a grade of C or better.

ENGR 203 - Electric Fund: Signals/Controls (4)

Covers transient circuit analysis: resistive-inductive (RL), resistive-capacitive (RC), resistive-inductive-capacitive (RLC). Introduces Laplace Transform and its use in circuit analysis, the transfer function, Bode diagram and two port networks.

Prerequisite: Prerequisite: ENGR 202 Electrical Fundamentals: AC Circuits with a grade of C or better.

ENGR 211 - Statics (4)

Covers the analysis of 2D and 3D force systems, moments, resultants, equalibrium, trusses, frames and machines, centroids, moment of inertia, shear and moment in beams, and friction. Recommended: Working knowledge of spreadsheets and/or MatLab.

Prerequisite: Prerequisite: MTH 252 Integral Calculus with a grade of "C" or better.

ENGR 212 - Dynamics (4)

Covers particle and rigid body kinematics and kinetics, Newton's laws, work/energy and impulse momentum. Recommended: PH 211 General Physics with Calculus and a working knowledge of spreadsheets and/or MatLab.

Prerequisite: Prerequisite: ENGR 211 Statics and MTH 252 Integral Calculus with a grade of "C" or better.

ENGR 213 - Strength Of Material (4)

Covers the analysis of simple stress and strain, pressure vessels, torsion, shear and moment, shear and normal stresses in beams, deflection, column analysis, and analysis of statically indeterminant structures. Recommended: Working knowledge of spreadsheets and/or MatLab.

Prerequisite: Prerequisite: ENGR 211 Statics and MTH 252 Integral Calculus with a grade of "C" or better.

ENGR 217 - Dynamics for Mechanical Engineering (4)
This class covers particle and rigid body kinematics and kinetics, work energy analysis, and impulse momentum.

Prerequisite: Prerequisites: ENGR 211 Statics, MTH 252 Integral Calculus, and PH 211 General Physics with Calculus with a grade of C or better.

ENGR 230 - Computational Methods for Engineering (4)
Introduces computational methods to solve engineering problems. Translates fundamental mathematical and engineering concepts into data structures and algorithms; extends and solidifies fundamental computational skills for effective and efficient practice. Develops skills for effective visualization of data.

Prerequisite: Prerequisites: ENGR 103 Engineering Computation and Algorithmic Thinking and MTH 254 Multivariable Calculus with a grade of C or better.

ENGR 242 - Introduction To GIS (3)

An introductory course in geographic Information systems (GIS). Uses Arc GIS software to display and work with spatial data, work with attributes, query databases, and present data. Required: Knowledge of computer and Windows operation.

ENGR 245 - Engineering Graphics: Civil (3)

Includes two-dimensional and three-dimensional graphics, sketching, multiview projection, dimensioning, descriptive geometry, engineering design and an introduction to AutoCadÎÂ. Required: Working knowledge of Windows Recommended: MTH 111Z (p. 181) Precalculus I: Functions.

ENGR 248 - Engineer Graphics: Mechanical (3)

Includes two-dimensional and three-dimensional graphics, sketching, multiview projection, dimensioning, descriptive geometry, and an introduction to computer based solid modeling. Required: Working knowledge of Windows.

Prerequisite: Prerequisite: MTH 111Z Precalculus I: Functions with a grade of C or better.

ENGR 271 - Digital Logic Design (3)
Provides an introduction to digital logic and state machine design. Covers logic design, including logic gates, gate minimization methods and design with standard medium scale integration (MSI) logic circuits. Includes basic memory elements (flip-flops) and their use in simple-state machines.

Prerequisite: Prerequisite: MTH 231 Elements of Discrete Mathematics or MTH 251 Differential Calculus with a grade of C or better.

ENGR 272 - Digital Logic Design Lab (1)
Laboratory component to accompany ENGR 271 Digital Logic Design. Illustrates topics covered in the lectures of ENGR 271 using computer-aided design, verification tools, and prototyping hardware.

Corequisite: Concurrent enrollment in ENGR 271.

ENGR 280 - CWE ENGINEERING (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to engineering. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

ESR - Environmental Studies

ESR 280 - CWE ENVIRONMENTAL SCIENCE (1 TO 12)

An instructional program designed to give students hands-on work related experience in environmental studies in a supervised employment situation. Students identify job performance objectives, work a specified number of hours during the term, report on their work experience, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

EV - Electric Vehicle Technology

EV 400 - EV/Hybrid System Architecture and Safety Systems (10)
Covers high voltage safety and personal protective equipment including the proper selection, testing, use, and maintenance of high voltage tools, equipment, gloves and attire. Also introduces high voltage vehicle system architectures focusing on identification of high voltage components, their locations, and their purpose at an introductory level using a systems approach that can be applied to various vehicle makes and models. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Prerequisite: Prerequisite: Completion of the first year of Automotive Technology AAS or completion of Maintenance and Light Repair (MLR) Certificate.

EV 401 - EV/Hybrid AC/DC Theory and Systems Operation (10)
Builds knowledge of Battery Electric Vehicle (BEV) and Hybrid Electric Vehicle (HEV) operation and design by taking a deeper dive into the theory and application of Direct Current (DC) and Alternating Current (AC) and its use in high voltage and low voltage vehicle systems. Students will learn to identify AC/DC components, understand how vehicle systems convert and utilize AC/DC and perform diagnostics and servicing of AC and DC components. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Prerequisite: Prerequisite: Completion of first year of Automotive Technology AAS or completion of Maintenance and Light Repair (MLR) Certificate.

EV 402 - Electric Vehicle Propulsion Systems (10)
Explores how High Voltage Battery Electric (BEV) and Hybrid Electric Vehicles (HEV) utilize powerful electric motors to provide the necessary force to move vehicles down the road. Lectures on the theory and science behind electromotive force will drive student understanding of how various motors, generators, and transmissions work in BEV/HEV drive systems. Hands on lab activities focus on locating, inspecting, and the proper analysis and diagnosis of high voltage vehicle drive system components and regenerative brake systems. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Prerequisite: Prerequisite: Completion of first year of Automotive Technology AAS or completion of Maintenance and Light Repair (MLR) Certificate.

EV 403 - Advanced Vehicle Control Networking Diagnosis (3)
Covers the history and evolution of the Controller Area Network (CAN) usage in vehicles and the current industry shift to faster communication technologies such as Flexray, Ethernet, Wireless (Wifi) and Bluetooth. Students will practice identifying various high speed networks, diagnosing failures, and performing repairs on modern vehicles. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Corequisite: Corequisite: EV 401 EV/Hybrid AC/DC Theory and Systems Operation.

EV 404 - Hybrid/EV Power Storage Systems/Battery Technology (3)
Focuses on high voltage power storage systems found in Hybrid and Electric Vehicles, specifically the safe testing, servicing, and replacement of high voltage battery packs. Students will learn to identify different battery designs, chemistries, and their vehicle applications. Laboratory activities will focus on the removal, disassembly and internal testing of high voltage battery packs for Hybrid, Plug-in Hybrid, and Electric Vehicles. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Corequisite: Corequisite: EV 400 EV/Hybrid System Architecture and Safety Systems.

EV 405 - Understanding Advanced Driver Assist Systems (ADAS) (3)
Explores a variety of advanced driver assist systems (ADAS) found on modern vehicles and prepares technicians to identify, diagnose, repair and replace ADAS and autonomous systems and their components. Advanced autonomous system technologies include radar, lidar, ultrasonic sensors, cameras, as well as artificial intelligence software to improve vehicle user interface and increase vehicle safety. Recommended: Valid driver's license, proof of vehicle insurance, clean driving record.

Corequisite: Corequisite: EV 402 Electric Vehicle Propulsion Systems.

FW - Fisheries and Wildlife

FW 251 - Prin Of Wildlife Conservation (3)

Introduces the relationships between the physical environment and wild animal populations. Examines the history of wildlife conservation and natural resource use, man's relationship to his natural environment, dynamics of animal populations, principles and practices of fisheries and wildlife management, and the role of wildlife biologists. College-level reading and writing strongly recommended.

GEOG - Geography

GEOG 100 - Climate Justice (3)
Unequal distribution of social, economic, and political power creates winners and losers from climate change. Case studies of climate-change-related environmental degradation, conflict, conservation, climate denial, renewable energy, and investment. Concepts and actions to promote climate justice.

GEOG 202 - Wrld Reg Geo: Latin Amer/Carib (3)

Analysis of Latin America/Caribbean according to physical features, environments, political divisions, cultural factors, and human activities/economies--emphasis on effect of geography on human culture. Recommended: College-level reading and writing skills.

GEOG 203 - World Reg Geography: Asia (3)

Analysis of Asia according to physical features, environments, political divisions, cultural factors, and human activities/economies--emphasis on effect of geography on human culture. Recommended: College-level reading and writing skills.

GEOG 204 - Wrld Reg Geo: Africa/Mid East (3)

Analysis of Africa and Middle East according to physical features, environments, political divisions, cultural factors, and human activities/economies--emphasis on effect of geography on human culture. Recommended: College-level reading and writing skills.

G - Geology

G 100 - Natural Disasters: Hollywood versus Reality (4)
Introduces natural hazards, as seen through the lens of popular media. Explores the causes and consequences of natural disasters via exercises and activities designed to develop students' skills in scientific analysis and problem solving.

G 101 - Intro to Geology: Solid Earth (4)
Introduces geology and the processes that shape the landscape. Includes a study of rocks and minerals, volcanic activity, plate tectonics, earthquake activity, and earthäó»s geologic resources. Field trips highlight topics discussed. Includes a laboratory component. Geology courses do not need to be taken in sequence.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

G 160 - Geology Field Exp:Cascades (1)

Introduces basic geological concepts through lecture and a field trip in the vicinity of the Oregon Cascade Mountains. Recommended: Completion or concurrent enrollment in a geology or related course is strongly recommended.

G 161 - Geology Field Experience:Coast (1)

Introduces basic geological concepts through lecture and a field trip in the vicinity of the Oregon Coast. Recommended: Completion or concurrent enrollment in a geology or related course is strongly recommended.

G 201 - Physical Geology I (4)
Introduces physical geology and fundamental geologic principles. Includes topics such as Earth's interior, tectonic processes, and their influence on mountains, volcanoes, earthquakes, rocks, and minerals. Laboratory component highlights rocks, minerals, and geophysical data. Suitable for science majors and non-majors. Geology courses do not need to be taken in sequence.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

G 202 - Physical Geology II (4)
Introduces physical geology and fundamental geologic principles. Includes topics such as surface processes related to mass wasting, erosion, streams, groundwater, coasts, deserts, glaciers and climate. Laboratory component highlights use of topographic maps and imagery. Suitable for science and non-science majors. Geology courses do not need to be taken in sequence.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

G 203 - Historical Geology (4)
Introduces Earth history through the rock and fossil record. Includes topics such as fossils, stratigraphy, geologic time, and biological and geological events in Earth's history. Laboratory component highlights rocks, fossils, and geologic maps. Suitable for geology majors and non-majors. Geology courses do not need to be taken in sequence.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

G 209 - Environmental Justice (3)
Examines the unequal exposure to environmental hazards and unequal access to natural resources by particular racial and socio-economic groups in the United States. Focuses on how the environmental justice movement has grown to address these issues. Recommended: WR 121Z with a C or better.

GS - General Science

GS 104 - Physical Science: Principles Of Physics (4)
Provides non-science majors a broad background in the fundamentals of physics. No previous science background required. May not be taken for credit if six or more hours of college level physics have been completed. There is no restriction on the order in which the courses are taken.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

GS 105 - Physical Science: Principles of Chemistry (4)
An introductory level laboratory science course. Offers a non-quantitative and descriptive survey of chemical principles relevant to everyday life. Includes the topics of applications of chemistry to environmental issues such as nuclear energy, recycling, air and water pollution, and energy resources.

Students may select a theme that interest them the most. This course may be used only once to meet graduation requirements. May not be taken for credit if six or more hours of college level chemistry have been completed.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

GS 106 - Phy Sci: Prin of Earth Science (4)
Introduces non-science majors to the Earth Sciences, including geology, meteorology, and astronomy. Includes a laboratory component. No previous science background required.

GS 108 - Oceanography (4)
An introductory laboratory science course. Examines the four major categories of oceanographic study: geological, physical, chemical and biological. Emphasizes the geological and geophysical aspects of the sea floor; physical and chemical properties of sea water, waves, tides, ocean circulation and currents; marine ecosystems; and ocean utilization.

Prerequisite: MTH 075 or MTH 098 with a grade of C or better, or equivalent.

GS 152 - Science, Technology & Society (3)

Investigates the nature of scientific endeavors and analyzes specific science and technology issues that affect societies in the United States and globally.

GS 154 - Energy & Sustainability (3)
Teaches students the fundamental concepts and skills related to alternative energy systems including wind, solar, bio-mass and small scale nuclear. Included is the study of personal, agricultural, and industrial energy efficiency. The relationship between energy efficiency, the laws of thermodynamics, economic realities, and technical operations are analyzed in relation to the interaction of societal needs.

GS 280B - CWE Physical Science (1-12)
Designed to give students practical experience in supervised employment related to physical science. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE Coordinator approval. May be repeated for a maximum of 24 credits.

HDFS - Human Dev Family Studies

HDFS 200 - Human Sexuality (3)

Discusses the biological, social and psychological aspects of human sexual functioning, within a scientific context. Topics include sexual anatomy, sexual response, gender identity, gender roles, sexual orientation, love, contraception, sexually transmitted infections and sexual coercion. Recommended: College-level reading and writing skills (WR 121) are strongly recommended for success in this course.

HDFS 201 - Contemporary Families in The U.S. (3)
Offers an introduction to families with application to personal life. Focuses on diversity in family structure, social class, race, gender, work, and its interaction with other social institutions.

HDFS 225 - Infant and Child Development (4)

An introduction to Human Development specifically focusing on prenatal, infant and child development. Describes issues, theories, and current research within a family context. Focuses on the domains of cognitive, physical, social and emotional development. Application to working with and understanding infants and young children.

HDFS 229 - School-Age Adolescent Development (4)

Focuses on theories and research specifically related to development during middle childhood and adolescence. Describes the domains of cognitive, physical, social and emotional development as well as the influences of

family, peers, schools, and community. Provides application to working with and understanding school-age and adolescent children.

HDFS 233 - Intro to Early Childhood Education (3)
Focuses on current issues in working with children and families in the early childhood profession. Students will become familiar with developmentally appropriate practice, legal and ethical issues, diversity, professionalism, and advocacy in early childhood care and education.

HDFS 248 - Learning Experiences/Children (3)
Focuses on child-centered curriculum experiences for young children (ages 0-8 years). Students will plan, present, evaluate and assess developmentally appropriate learning experiences. Students will research age appropriate materials and environments which promote language/cognitive, physical and social/emotional development. Students will explore the perspective of the young child and collaborate in teams to present learning activities.

Prerequisite: Required: Students must successfully complete a criminal history background check, TB test, confidentiality statement, and code of conduct prior to starting class.

HDFS 260 - Emotional Well-Being: Tools for Positive Mental Health (4)
Explores how emotional well-being develops across the lifespan within family and societal contexts. It compares and contrasts theories of social and emotional development across socio-cultural and historical contexts with attention to the bidirectional relationships between people and institutions.

Students will learn about, discuss, and critique research on social and emotional development while applying practical tools for positive mental health and emotional well-being.

HDFS 261 - Working with Individuals and Families (3)
Develops a framework for building collaborative relationships with individuals, parents, and family members. It emphasizes needed characteristics and skills for helping professionals. Communication, collaboration and partnerships to foster family, individual and child success are emphasized. The course also explores the institutionalized power dynamics in the United States and how this impacts interpersonal relationships in the professional setting.

Prerequisite: Recommended: Completion of COMM 218Z Interpersonal Communication and HDFS 201 Contemporary Families in the United States.

HDFS 262 - Introduction to Human Services (3)

Explores the human services profession and related fields, with emphasis on prevention, intervention, and remediation. Facilitates the understanding of the wide range of careers and settings in the human services and related fields. Prepares students for HDFS (Human Development and Family Studies) beginning practicum. Emphasizes the centrality of social justice and equity in the Human Services profession.

HDFS 272 - Human Services Practicum (4)
Offers field experience to learn, primarily through observation, how to apply human service intervention strategies and skills to help individuals and families served by professional agencies and organizations. Provides supervision by agency and instructor. Requires 90 hours of work on-site. Introduces basic theories and skills through readings, discussion and reflective exercises. Repeatable for a maximum of 10 credits. Graded P/NP.

Prerequisite: Prerequisite: HDFS 262 Human Services Internship Orientation with a grade of C or better.

HDFS 280 - CWE Childhood Development (1 TO 12)

Structured field experience in a child-focused setting. Working with a master practitioner, students learn current child-focused strategies and techniques. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Credits are based on identified objectives and number of hours worked. This is a supervised work experience that must be approved by the CWE coordinator prior to enrolling in the class. May be repeated for a maximum of 24 credits.

HD - Human Development

HD 140 - Career Exploration (3)
Introduces different ways to explore careers. Compares careers through self-assessments, identification of personal needs, review of college programs, informational interviews, guest speakers, and online resources. Students will gain self-knowledge and be exposed to work environment differences.

HD 206 - Coping Skills For Stress (2)

Provides information about causes and cures of stress from the point of view of self-talk and the power of our minds to reduce the impact of stress. The class is support oriented and is conducted as part lecture and part group process.

HD 208 - Career Life Planning (3)

A career development class which evaluates interests, skills, personal values, labor market conditions, work environment preferences, and academic and personal goals as they relate to career choice. Students will identify programs of study that complement individual needs.This course includes decision-making and goal setting methods to aid in making a confident career choice. Strategies for career success are identified through the analysis of employer expectations, examination of non-technical employment skills, and exploration of diversity topics. Recommended: Completion of ALS 100 Applied Learning Strategies with a grade of C or better, or placement test score above ALS 100.

HD 208A - Career Planning (1 TO 3)

Students investigate personal career paths using career assessment tools and techniques and create a career plan. Recommended: Completion of ALS 100 Applied Learning Strategies with a grade of C or better, or placement test score above ALS 100.

HE - Health

HE 100 - Introduction to Public Health (4)

This survey course covers the basic elements of public health and the complex ethical and political issues central to it. The class is open to undergraduate students of all majors who want to know more about the field of public health, what it is, how it is organized, and how it works.

HE 110 - First Aid and CPR (1)
Prepares the student in basic first aid and adult CPR (American Red Cross CPR card) and provides information to properly administer the necessary immediate care to an injured or suddenly ill person. An emphasis is placed on early recognition of emergency medical situations and taking appropriate steps to stabilize the victim while activating the emergency medical services system. May be repeated for a maximum of 2 credits.

HE 112 - Emergency First Aid (1)
Covers basic first aid information in an attempt to prepare the student to properly administer the necessary immediate care to an injured or suddenly ill person. Note: Full day or two evening classes. May be repeated for a maximum of 2 credits.

HE 125 - Occupational Safety and Health (3)
Introduces the student to fundamentals of occupational health and safety in regard to accident causation theory and accident prevention, health and safety management, health and safety practices, hazard identification and control, safety history and legislation, workers' compensation practices, and practical aspects of complying with current safety regulations.

HE 151 - Drugs in Society (3)
Addresses the pharmacology of some popular drugs in Western society. Discusses contemporary issues involving the effects of drug use, misuse and abuse on the individual and society in general.

HE 204 - Exercise & Weight Management (3)

Provides students with scientifically based strategies for controlling and managing weight. Offers students an opportunity to design and monitor participation in a personal weight management program that includes individual assessments, nutritional awareness, stress management and exercise. Since exercise is one of the most crucial factors in healthy weight management, students are encouraged to register for a physical education activity class when they register for this class.

HE 207 - Stress Management (3)
Students learn the theoretical and scientific basis for the various components of stress, the stress response and the relaxation response. Students learn how to recognize and cope appropriately with physical, occupational, social, school and environmental stressors. The course emphasizes achieving lifestyle balance and shows students how to develop and practice physiologic relaxation techniques and stress reduction methods.

HE 210 - Intro To Health Services (3)

An introductory overview of the U.S. health care system. Health care financing, inpatient and outpatient health service delivery, government regulatory agencies and topics relating to quality and access will be explored.

HE 220 - Intro to Health Data Analysis (3)
Introduction to the use and application of biostatistics for students in health-related studies. Topics include qualitative analysis, quantitative analysis and inference, and statistical methods in the biosciences to evaluate and control health problems.

Prerequisite: Prerequisite: Completion of MTH 095 or higher with a grade of C or better.

HE 225 - Social Determinants of Health (4)
This course explores how social conditions, factors, institutions, and systems where we are born, grow, work, live, and age influence health. Students will explore historical and contemporary examples of health determinants to examine why differential risks of poor health and premature mortality persist. Application of selected health behavior models and theories will be utilized to demonstrate the complex interplay between individual, interpersonal, organizational, community, and societal factors.

HE 250O - Intro to Health Care Administration (3)

An introduction to the administrative operations of health care organizations. Examines the various service settings and their organization, personnel and resources as well as the role of the manager in health care settings.

Prerequisite: Prerequisite: HE 210 Intro to Health Services with a grade of C or better.

HE 252 - First Aid (3)

Provides first aid instruction and practice in skills that enable students to take care of themselves and to aid others in the event of an accident or illness.

HE 253 - AIDS and Sexually Transmitted Diseases (3)

Provides a fundamental understanding of HIV/AIDS and other sexually transmitted disease from a national and global perspective. The history, etiology, epidemiology and prevention strategies will be examined. The course will assist students in developing an understanding of diverse cultures, customs, attitudes, values and beliefs in the context of disease transmission and eradication.

HE 256 - Foundations of Public Health Education and Promotion (4)
Covers fundamental concepts and theories of health education and promotion fields including the history, evolution, as well as the current status of health promotion programs and public health services in the U.S. Addresses the influences on health behavior, and the contexts in which population health and disease can be positively influenced by individuals, groups, and communities. Explores professional standards, roles and competencies, career opportunities and future trends in health promotion.

HE 261 - Adult CPR/AED with Pediatric (1)
Designed to teach the skills of CPR and relief of foreign body airway obstruction (FBAO) for victims of all ages. It is intended for participants who may need to perform CPR or airway obstruction techniques in a wide variety of settings. This class follows the guidelines for the American Red Cross. May be repeated for a maximum of 2 credits.

HE 261A - CPR: Professional Rescuer (1)
The Healthcare Provider course is designed to teach the skills of CPR for victims of all ages (including ventilation with a barrier device, a bag-mask device and oxygen), use of an automated external defibrillator (AED) and relief of foreign-body airway obstruction (FBAO). It is intended for participants who provide health care to patients in a wide variety of settings.

HE 267 - Wellness Coaching Fundamentals (3)
This course examines health and wellness coaching techniques and the practical application of current evidence-based interventions, behavior change theory, psychological theories of coaching, and ethics. Practical applications will be addressed through class activities such as initiating a client health and wellness assessment, developing collaborative and client-generated goals and strategies, and techniques to support client self-discovery.

Prerequisite: Prerequisite: PE 231 Lifetime Health and Fitness with a grade of C or better.

HE 280 - CWE Health (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to health. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for

a maximum of 24 credits.

HE 281 - Community Birth Doula (4)
This course imparts the core knowledge and skills necessary to serve in the capacity as a community birth doula and to meet the birth doula training requirements to become certified as a Traditional Health Worker (THW) Birth Doula through the state of Oregon. The course prepares people to practice the role of the birth doula as an educator, supporter, comforter, companion, connector, navigator, guide, facilitator, and protector of childbearing families.

The events and experiences surrounding childbearing have life-long implications. Key goals of the course are to improve holistic health outcomes for birthing persons and infants, positively affect individual and healthcare system transformation, and advance reproductive health equity. While there is an emphasis on the facilitation of the physiological childbearing process through a wealth of tried-and-true measures to help birthing people cope with their labors and cultivation of positive birthing attitudes, the training is comprehensive in helping families to cope with a variety of birth pathways, including unexpected outcomes. Support skills include hands-on techniques, interviewing and communication skills, and the creation of therapeutic presence.

HE 282 - Foundations of Community Health (6)
Provides the foundations of community health work which includes topics such as navigating the health care system, creating behavioral change plans, supporting case management, and working with agencies to advocate for system changes. Aligns with the Oregon Health Authority required coursework for a community health worker.

HS - Human Services

HS 280 - CWE HUMAN SERVICES (1 TO 12)

Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress towards student goals with their site supervisor and their CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

HST - History

HST 101 - History of Western Civ: Ancient World to 1000 AD (4)
Identifies and analyzes the origins and development of Western Civilization from its beginnings through the High Middle Ages. Includes analysis of culturally and historically diverse practices, values, and beliefs among the civilizations of Mesopotamia, Egypt, Greece, and Rome.

(History classes at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other course. All courses have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 102 - History of Western Civ: 1000 to 1789 (4)
Surveys western civilization from the High Middle Ages through the American and French Revolutions. Includes the topics of the Renaissance, the Scientific Revolution, and the Enlightenment.

(History courses at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other course. All courses have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 103 - History of Western Civ: 1789 to the Present (4)
Surveys western civilization from the Industrial Revolution through the modern era. Also includes Romanticism, the Revolutions of 1830 and 1848, Imperialism, World Wars I and II and the Cold War.

(History classes at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other class. All classes have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 104 - World History I: Ancient Civilizations (3)
A survey of the global human development from roughly the dawn of humans to 1000 CE. The course identifies the main historical forces to shape the human experience and to highlight the monumental innovations that changed the

way ancient humans lived. The course will explore the connections and disconnections across geographic, social, and cultural barriers.

HST 105 - World History II: Middle and Early Modern Ages (3)
Surveys the development of world civilizations from the 8th century until the 18th century. Explores social, cultural, political, economic, and religious institutions and forces, both within societies and across borders, continents, and oceans. Analyzes processes of cross-cultural exchange and the forces that shape and change human cultures. Traces several major themes and events that began to lay the foundations of the modern globalized world.

HST 106 - World History III: The Modern and Contemporary World (3)
Surveys globally significant processes, including socio-political reforms and revolutions, industrialization and technology, imperialism, and the reshaping of social relationships from the 18th century to the contemporary period. Discusses how these processes began, traveled beyond their countries of origins, and then became localized in various countries and regions. Explores how the contemporary world has inherited or departed from the modern era by focusing on decolonization, critical reflections on dominant modern ideologies, and the increasing presence of non-Western or developing countries on the global stage as cultures and powers.

HST 157 - Hist of Middle East & Africa (3)
Surveys the cultural, social, economic and political development in the Middle East and Africa.

Prerequisite: Recommended: College-level reading and writing skills.

HST 158 - History of Latin America (3)
Surveys the cultural, social, economic and political development of Latin America.

Prerequisite: Recommended: College-level reading and writing skills.

HST 159 - History of Asia (3)
Surveys the cultural, social, economic and political development of Asia. Emphasizes 20th century issues.

Prerequisite: Recommended: College-level reading and writing skills.

HST 201 - US History: Origins to 1820 (4)
Provides an overview of the United States from North American and European antecedents to colonization, Colonial America, Revolutionary America; development of U.S. government, economy and society to 1820.

(History courses at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other course. All courses have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 202 - US History: 1820-1920 (4)
Provides an overview of United States History from 1820 to 1920. Includes but is not limited to: Western Expansion; the growth of sectional tensions; slavery; Civil War; Reconstruction; subjugation of Indian Nations and the establishment of the reservation system; the Gilded Age; and Populism.

(History courses at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other course. All courses have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 203 - US History: 1920- the Present (4)
Provides an overview of the United States in the 20th century. Includes Urbanization, Industrialization, the Progressive Movement, World Wars I and II, and the Cold War, as well as rights movements with an emphasis on domestic social and political history.

(History courses at LBCC can be taken in any order. Lower numbers do not necessarily represent a starting point. No prior coursework in History is required to take this or any other course. All courses have similar expectations regardless of the course number.)

Recommended: College-level reading and writing skills are strongly recommended for success in this course.

HST 280 - CWE HISTORY (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to history. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

HUM - Humanities

HUM 101 - Humanities: Prehistory-Mid Ages (3)

Examines the connections among arts, ideas and human experiences through study and experience of selected works from Western and non-Western cultures. Emphasizes arts and ideas as reflections of and influences on social and cross-cultural change. Attendance at out-of-class activities is required. Note: Need not be taken in sequence.

Prerequisite: Recommended: College-level writing and reading skills (WR 121Z) are strongly recommended for success in this course.

HUM 102 - Humanities: Renaissance-Enlight (3)

Examines the connections among arts, ideas and human experiences through study and experience of selected works from Western and non-Western cultures. Emphasizes arts and ideas as reflections of and influences on social and cross-cultural change. Attendance at out-of-class activities is required. Note: Need not be taken in sequence.

Prerequisite: Recommended: College-level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

HUM 103 - Hum: Romantic Era-Cont Society (3)

Examines the connections among arts, ideas and human experiences through study and experience of selected works from Western and non-Western cultures. Emphasizes arts and ideas as both reflections of and influences on social and cross-cultural change. Attendance at out-of-class activities is required. Need not be taken in sequence.

Prerequisite: Recommended: College-level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

HVE - Heavy Equipment Diesel

HVE 112 - Employability Skills (3)
Focuses on communication skills, professional interactions, and appropriate workplace behavior. Covers job search techniques and builds on employability skills related to resume writing, job applications, employment tests, cover letters, mock interviews, and professional dress and grooming. Includes tailoring resume packages for specific job listings and employers.

HVE 114 - Fundamental Shop Skills (3)
Provides practical working knowledge of safety in the trade areas of employment. Uses safety regulatory agencies as a foundation, and also includes forklift training. Includes online training specific to safety and pollution prevention.

Prerequisite: Placement into MTH 075 or higher.

HVE 116 - Electrical & Electronic Systems (10)
Introduces the theory, application and diagnosis of the electrical and electronic control systems for modern vehicles. Places emphasis on batteries, starting, charging, lighting, accessories and driver information systems. Provides preparation for ASE certification in electrical/electronic systems.

Prerequisite: Placement into MTH 075 or higher.

HVE 122 - Service and Repair (3)
Introduces students to service and repair in a structured shop environment.

Prerequisite: CST 114 or HVE 114. Corequisite: N/A.

HVE 126 - Steering, Suspension, and Brakes (10)
Introduces the theory and application of pneumatic braking systems. Covers service, diagnose, and repair of ABS (anti-lock breaking systems), and foundation, accessory, and safety of air systems. Also includes the theory and operation of heavy duty steering and suspension systems, automotive alignment, and braking systems. Covers diagnosis and service techniques, with the use of components and vehicles. Includes multi-media presentations, discussion research, and lab practice.

Prerequisite: Placement into MTH 075 or higher.

HVE 136 - Power Train Systems (10)
Covers power train terminology, theory and operation, driveshaft function and construction, maintenance practices, power train schematics, troubleshooting and failure analysis, and component rebuild and replacement. Includes use of electronic resources such as John Deere Service Advisor and CAT SIS technical manuals to perform required tasks.

Prerequisite: Placement into MTH 075 higher.

HVE 214 - Mobile Hydraulics (10)
Covers basic hydraulic theory and schematics. Introduces pumps, actuators, actuator applications, valve design, and

hydraulic valve theory. Also covers advanced hydraulic theory, service and repair of the above listed components, connectors used in mobile equipment hydraulic systems, systems design, and OEM (original equipment manufacturer) modifications. Uses hydraulic schematics and theory of operation and addresses repair, adjustment, and troubleshooting of electronic controls. Addresses common customer concerns and solutions, specific to heavy equipment. OEM operational check-out procedures and laptop computer testing of heavy equipment will be performed in labs.

Prerequisite: Placement into MTH 075 or higher; and HVE 116 or CST 116 with a grade of C or better; and HVE 126 or CST 126 with a grade of C or better; and HVE 136 or CST 136 with a grade of C or better.

HVE 224 - Heavy Equipment/Diesel Engines (10)
Covers the operating principles, maintenance, and repair of various types and sizes of diesel engines and high compression gas engines. Focuses on diesel engines, their component parts, and related accessories, from the perspective of troubleshooting. Examines the study of manufacturer's specifications as they pertain to correct engine operation, performance, and emissions.

Prerequisite: Placement into MTH 075 or higher; and HVE 214 or CST 214 with a grade of C or better.

HVE 226 - Customer Service for Heavy Equipment Technicians (3)
Focuses on effective communication with internal and external customers. Emphasizes troubleshooting and project management methods that incorporate customer service skills coupled with communicating effectively with people from different social and cultural backgrounds. Includes job search skills for obtaining employment in the industry, as well as repair and design options that promote energy efficiency.

HVE 234 - Diesel Engine Performance, Efficiency, and Ecology (10)
A capstone course. Introduces diesel tune-up and techniques for optimum engine performance, including diagnostic troubleshooting and engine break-in procedure through use of the dynamometer. Focuses on critical thinking skills covered in previous courses to solve real world problems on mechanical and computer managed engine and truck. Includes the ITS Diesel Club.

Prerequisite: Placement into MTH 075 higher; and HVE 214 or CST 214 with a grade of C or better.

HVE 236 - Mobile Air Conditioning & Comfort System (3)
Introduces principles of mobile heating and air conditioning systems. Emphasizes design, function, adjustment, service, and testing of components.

Prerequisite: Prerequisite: Placement into MTH 075 Variables and Linear Equations or higher, and HVE 116 Electrical and Electronic Systems with a grade of C or better. Corequisite: None.

IN4. - Industrial Technology

IN4. 164 - Technical Writing for CTE (3)
Covers processes and fundamentals of writing field-specific technical documents, including structure, organization and development, audience analysis, diction and style, revision, editing, mechanics and standard usage, and writing process required for successful workplace writing. This course focuses on writing work place documents commonly written by technicians: emails, descriptions, customer intake documents, documentation of work completed, bad news messages, instructions, summaries, accident reports, resumes, cover letters, troubleshooting procedures, proposals, request for quotes, etc.

JN - Journalism

JN 134 - Intro to Photojournalism (3)
Introduces students to photojournalism traditions and techniques, from taking photos for publication to exploring the law, ethics and history of documentary photography and its impact on audiences. Covers topics such as taking photos for story-telling, evaluating images for relevance and impact, basic camera techniques and digital reproduction and online presentation. Includes digital photo lab work. Basic digital photography experience suggested, though not required.

JN 201 - Media And Society (4)

Studies the history, development, technology and social impact of the various mass media. Includes critical analysis of media practice and ethics, the study of significant figures and developments, and the examination of the media as channels of expression in popular culture.

JN 215A - Journalism Lab (1)
Offers supervised editorial work on the college's student newspaper (The Commuter) in reporting and editing. Provides training and experience with computerized word processing. Note: Course serves as the lab for JN 216 News Reporting and Writing and JN 217 Feature Writing.

May be taken independently from those courses. May be repeated for a maximum of 3 credits.

JN 215B - Design & Production Lab (2)
Offers supervised experience in newspaper page design, headline writing, computer pagination, digital imaging, photography, advertising and related newspaper production skills. Students apply skills in production lab for the college's student newspaper (The Commuter). May be repeated for a maximum of 6 credits.

JN 216 - News Reporting & Writing (3)

Introduces basics of reporting and journalistic writing, including news style, grammar and story structure. Students also study journalism history, literature, ethics, law and critical thinking as applied to information gathering.

Prerequisite: Corequisite: JN 215A Journalism Lab.

JN 217 - Feature Writing (3)

Covers various forms of nonfiction writing, including profiles, human interest, travel and analysis, with emphasis on backgrounding, depth reporting, descriptive writing and free-lancing.Continues examination of issues in journalism, history, literature, ethics and law. Special attention to the literary journalism form. Recommended: College level reading and writing skills (WR 121Z) are strongly recommended for success in this course.

JN 280 - CWE Journalism (1 TO 12)

An instructional program designed to give students practical experience in supervised journalism-related employment. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

MA3. - Machine Tool Technology

MA3. 396 - Manufacturing Processes I (6)
Provides training in the skills necessary to pursue a career in the machinist's trade. The lecture portion of Manufacturing Processes I introduces students to the fundamentals of good machining practices; theory/practical considerations are covered. In the laboratory aspect of this course each student completes a series of projects that emphasize safe operation of machine tools. The safety aspect of the course includes: Prevention of accidents, injuries and illness at the work site, and measures that provide protection from exposure to hazards and hazardous materials.

MA3. 396B - Manufacturing Processes I (2)
Provides training and learning experiences in basic machining operations. Uses the lathe, milling machine, and other machine tools to complete projects. Finished projects are used to participate in a contest; judging is based on performance, craftsmanship, and technology utilization. Requires students to demonstrate some design responsibilities. Emphasizes skills for successful employment.

MA3. 397 - Manufacturing Processes II (6)
Provides machine tool technology training and learning opportunities at an intermediate level. Instruction will be given in the safe and efficient operation of machine tools. Theory and practical considerations will be covered. Environmental awareness information is included in this course.

MA3. 397B - Manufacturing Processes II (2)
This lecture/lab course focuses on advanced machine tool operation. Determining machine tool selection, setup and planning for multi-tool projects will be covered. Shop math, including trigonometry and elementary algebra, will be used to make calculations. Students will complete a series of machining projects. This course includes instruction on basic computer numerical control (CNC) machining and turning.

MA3. 398 - Manufacturing Processes III (6)
Focuses on advanced machine tool operation. Determining machine tool selection, set-up and planning for multi-tool projects will be covered. Shop math, including trigonometry and elementary algebra will be used to make calculations. Students will complete a series of advanced machining projects. A career specialist will deliver information about job search skills.

MA3. 398B - Manufacturing Processes III (2)
This lecture/lab course focuses on advanced machine tool operation. Determining machine tool selection, setup and

planning for multi-tool projects will be covered. Shop math, including trigonometry and elementary algebra, will be used to make calculations. Students will complete a series of advanced machining projects.

MA3. 405 - Inspection I (2)

This course provides training and learning opportunities in the science of measurement as it relates to manufacturing. The correct use of measuring tools to collect data at logical intervals throughout the manufacturing process will be covered. Students will be introduced to some of the practical considerations that relate to size, tolerance and other specifications. The measuring tool we will be studying include inch and metric rulers, micrometers, dial and digital calipers, the surface plate, sine bars, gage blocks and the combination set.

MA3. 406 - Inspection II (2)
Provides training in measurement as it relates to manufacturing. Geometric Dimensioning and Tolerancing (GD&T), surface plate inspection methods and tools, optical comparator, surface roughness, inspection of threads and other topics will be covered. This course includes information on human relations skills including; working cooperatively as a member of a team or manufacturing cell, customer relations, and working with diverse populations.

MA3. 407 - Computation For Machinists (1)
Provides computation training for machinists and programmers. Covers scientific calculator functions, basic algebra, right angle trigonometry, geometry, and the cartesian coordinate system as applied to machining operations.

MA3. 409 - Mathematics for Machinists (4)
Designed to provide machinists with the foundational mathematical skills needed for precision work in the manufacturing and machining industries. Focusing on real-world applications, learn to apply mathematical concepts such as geometry, algebra, trigonometry, and measurements to solve problems commonly encountered in machining tasks. Emphasis will be placed on interpreting prints, calculating dimensions and tolerances, scientific calculator usage, and using math to select and operate machinery with accuracy. Through-hands on exercises, students will gain the skills to understand and apply measurements and calculations in machining, inspecting and assembling components so as to improve the efficiency and quality of work results.

MA3. 412 - CAM I (3)
Provides training and learning in the use of Mastercam Computer Aided Manufacturing (CAM) software. Covers how to create part geometry, select tools, specify toolpaths, and generate Computer Numeric Control (CNC) machine code. Emphasizes Mastercam applications as they relate to turning center operations.

MA3. 416 - CNC: Special Projects (4)
Provides advanced Computer Numerical Control (CNC) training. Students are required to demonstrate CNC machine operator skills on several controls as well as set up knowledge. Students will have some design responsibilities as they complete projects. Careful planning, good machining practices, economic/business concerns, documentation and safety will be emphasized.

Prerequisite: Prerequisites: MA3.420 CNC Mill and MA3.421 CNC Lathe with a grade of B or better.

MA3. 420 - CNC: Mill (4)
Provides training in the operation and part programming of the modern vertical machining center. Students learn safe manufacturing methods by completing a series of assignments using one of two Haas vertical machining centers. Students will gain experience reading, writing and editing part programs using industry standard G & M code programming. Required: Basic computer competency.

MA3. 421 - CNC: Lathe (4)
Introduces students to a modern CNC turning center and part programming using industry standard ISO/EIA machine code for the Fanuc controller. Students turn aluminum parts to specifications on a Hitachi Seiki CNC Lathe. Safety procedures are emphasized. Prepares students for mastery of the two axis lathe coordinate plane. Required: Basic computer competency.

MA3. 427 - Solidworks I (3)
The first course in a two-course Solidworks series. Provides introductory training and learning experiences in parametric solid modeling with Solidworks Computer-Aided Design software (CAD), which makes it possible for designers to quickly sketch out ideas, experiment with features and dimensions, and produce models and detailed drawings.

MA3. 428 - Solidworks II (3)
The second course in a two-course Solidworks series. Provides advanced training and learning experiences in Solidworks solid modeling Computer-Aided Design software (CAD), which makes it possible for designers to quickly sketch out ideas, experiment with features and dimensions, and produce models and detailed drawings.

Prerequisite: Prerequisite: MA3. 427 Solidworks I with a grade of C or better.

MA3. 431 - Basic Print Reading: Metals (2)

Provides training in interpreting blueprints.

MA3. 432 - Introduction To Mastercam (3)
The first course in a three course Mastercam series.

Introduces the use of Mastercam CAD/CAM (Computer Aided Design)/(Computer Aided Manufacturing) software to design parts and toolpaths for a modern CNC (Computer Numerical Control) vertical machining center. Consists of a series of exercises that progress from designing a 2D part and creating a contour toolpath, to creating 3D solid models and more advanced 2D milling toolpaths.

MA3. 433 - Mastercam II (3)
The second course in a three course Mastercam series.

Continues with more advanced 2D toolpaths and progresses to 3D surfacing toolpaths. Consists of a series of exercises that emphasize safe machining as well as the use of project organization and communication to promote efficient teamwork.

Prerequisite: Prerequisite: MA3. 432 Introduction to Mastercam with a grade of C or better.

MA3. 434 - Mastercam III (3)
The third course in a three course Mastercam series.

Reinforces the skills learned in the previous two courses of the Mastercam series as well as introduces multi-axis mill and mill-turn strategies through a series of exercises of increasing complexity. Emphasizes safe and efficient machining strategies along with proper documentation and communication to enable teamwork.

Prerequisite: Prerequisite: MA3. 433 Mastercam II with a grade of C or better.

MA3. 437 - Materials Science (2)
This course investigates the relationships that exist between structures and the properties of materials. The study of atomic structure and chemical makeup provides the basis for material classification. The subjects of bonding forces and crystal structures are explored. Lecture topics include dislocations, strengthening mechanisms, slip systems, phase transformations and plastic deformation in polycrystalline materials. The emphasis is on ferrous metals; non-ferrous metals, ceramics, polymers and composite materials will be included.

MA3. 438 - Manufacturing Processes IV (3)
This course provides training in manual machining skills at an advanced level. A series of lectures, textbook assignments and tests will be utilized. Students will complete a series of machine shop projects using manual machine tools including lathes and mills. Inspection procedures are emphasized. Quality and safety are key concepts of this course.

Prerequisite: Prerequisites: MA3.396 Manufacturing Processes I, MA3.397 Manufacturing Processes II and MA3.398 Manufacturing Processes III with a C or better.

MA3. 439 - Manufacturing Processes V (3)
This course provides training in manual machining skills at an advanced level. A series of lectures, textbook assignments and tests will be utilized. Students will complete a capstone project using manual machine tools including lathes and mills. Function of mating parts of an assembly is emphasized. Quality and safety are key concepts of this course.

Prerequisite: Prerequisite: MA3.396 Manufacturing Processes I, MA3.397 Manufacturing Processes II, MA3.398 Manufacturing Processes III and MA3.438 Manufacturing Processes IV with a C or better.

MA3. 451 - Advanced CNC Technology I (3)
Provides training and learning experiences in Computer Numeric Control (CNC) technology. Includes training on CNC operation skills that are applicable to a number different of CNC machines and controls. Focuses on safe operator skills and machine setup procedures in a milling environment.

Prerequisite: Prerequisites: MA3. 420 CNC: Mill and MA3. 421 CNC: Lathe with a grade of B or better.

MA3. 452 - Advanced CNC Technology II (3)
Provides training and learning experiences in Computer Numeric Control (CNC) technology. Includes training on safe CNC operation skills that are applicable to a number of different CNC machines and controls. Focuses on safe machine setup and operation. Includes other topics such as fixturing, tooling, and programming considerations for multiple axis machining.

Prerequisite: Prerequisites: MA3. 420 CNC: Mill and MA3. 421 CNC: Lathe and MA3. 451 Advanced CNC Technology I with a grade of B or better.

MA3. 454 - Workholding for Machining (2)
Provides training and experience in the practical applications of multiple workholding methods on modern manufacturing equipment. Covers how to safely choose and implement workholding techniques based on the

requirements of a project. Focuses on fixturing for CNC mills and lathes, briefly covering other manufacturing technologies. Includes a balance of lecture and hands-on learning experiences designed to help students learn problem solving techniques in a fundamental manufacturing topic.

Prerequisite: Prerequisite: MA3. 452 Advanced CNC Technology II with a grade of C or better. Corequisite: Corequisite: MA3. 453 Advanced CNC Technology III.

MP - Music Performance

MP 151 - Rehearsal and Performance (1)
Offers credit for music rehearsal directly related to Performing Arts Department performance. Course may involve musical performance in musical theater, workshop course specially designed, or combination courses as outlined by the department. Required: Instructor approval. May be repeated for a maximum of 3 credits.

MP 171 - Individual Lessons Piano (1-2)
Designed to facilitate the student's general music background and to address their skill level on the piano. Attention is also given to the individual's goals in learning to play the piano and an interest they may have in learning to play particular styles of piano music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 172 - Individual Lessons Organ (1-2)
Facilitates the student's general music background and addresses their skill level on the organ. Gives attention to the individual's goals in learning to play the organ and an interest they may have in learning to play particular styles of organ music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 174 - Individual Lessons Voice (1-2)
Provides individual instruction in voice. Students will focus on improving vocal technique in a variety of areas such as pitch matching, breath control, posture, and vocal quality. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 175 - Individual Lessons Guitar (1-2)
Individual guitar lessons for beginners or those with minimal formal training are designed to facilitate the student's general music background and to address their skill level on the guitar. Attention is also given to the individual's goals in learning to play the guitar and an interest they may have in learning to play particular styles of guitar music. Recommended: Students should have a basic knowledge of reading music, but it is not required. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 176 - Individual Lessons Singer/Songwriter (1-2)
Facilitates the development of the student's general music background and addresses their skill level as a singer/songwriter. Gives attention to the individual's goals in learning to play, sing, and compose popular music. Places emphasis on voice accompanied by guitar and/or piano. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 177 - Individual Lessons Composition (1-2)
Facilitates the development of the student's general music background and addresses their skill level as a composer. Gives attention to the individual's goals in learning to compose music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 181 - Individual Lesson Flute (1-2)
Facilitates the student's general music background and addresses their skill level on the flute. Gives attention to the individual's goals in learning to play the flute and an interest they may have in learning to play particular styles of flute music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 182 - Individual Lessons Tuba (1-2)
Facilitates the student's general music background and addresses their skill level on the tuba. Gives attention to the individual's goals in learning to play the tuba and an interest they may have in learning to play particular styles of tuba music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 183 - Individual Lessons Clarinet (1-2)
Facilitates the student's general music background and addresses their skill level on the clarinet. Gives attention to the individual's goals in learning to play the clarinet and an interest they may have in learning to play particular styles of clarinet music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 184 - Individual Lessons Saxophone (1-2)
Facilitates the student's general music background and addresses their skill level on the saxophone. Gives attention to the individual's goals in learning to play the saxophone and an interest they may have in learning to play particular styles of saxophone music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 185 - Individual Lessons Bassoon (1-2)
Facilitates the student's general music background and addresses their skill level on the bassoon. Gives attention to the individual's goals in learning to play the bassoon and an interest they may have in learning to play particular styles of bassoon music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 186 - Individual Lessons Trumpet (1-2)
Facilitates the student's general music background and addresses their skill level on the trumpet. Gives attention to the individual's goals in learning to play the trumpet and an interest they may have in learning to play particular styles of trumpet music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 187 - Individual Lessons French Horn (1-2)
Facilitates the student's general music background and addresses their skill level on the French horn. Gives attention to the individual's goals in learning to play the French horn and an interest they may have in learning to play particular styles of French horn music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 188 - Individual Lessons Trombone (1-2)
Facilitates the student's general music background and addresses their skill level on the trombone. Gives attention to the individual's goals in learning to play the trombone and an interest they may have in learning to play particular styles of trombone music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 189 - Individual Lessons Oboe (1-2)
Facilitates the student's general music background and addresses their skill level on the oboe. Gives attention to the individual's goals in learning to play the oboe and an interest they may have in learning to play particular styles of oboe music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 191 - Individual Lessons Percussion (1-2)
Facilitates the student's general music background and addresses their skill level on percussion. Gives attention to the individual's goals in learning to play percussion and an interest they may have in learning to play particular styles of percussion music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum

of 6 credits.

MP 192 - Individual Lessons Violin (1-2)
Facilitates the student's general music background and addresses their skill level on the violin. Gives attention to the individual's goals in learning to play the violin and an interest they may have in learning to play particular styles of violin music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 193 - Individual Lessons Viola (1-2)
Facilitates the student's general music background and addresses their skill level on the viola. Gives attention to the individual's goals in learning to play the viola and an interest they may have in learning to play particular styles of viola music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 194 - Individual Lessons Double Bass (1-2)
Facilitates the student's general music background and addresses their skill level on the double bass. Gives attention to the individual's goals in learning to play the double bass and an interest they may have in learning to play particular styles of double bass music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 195 - Individual Lessons Cello (1-2)
Facilitates the student's general music background and addresses their skill level on the cello. Gives attention to the individual's goals in learning to play the cello and an interest they may have in learning to play particular styles of cello music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 251 - Rehearsal And Performance (1)
Offers credit for music rehearsal directly related to Performing Arts Department performance. Course may involve musical performance in musical theater, workshop course specially designed, or combination courses as outlined by the department. Required: Instructor approval. May be repeated for a maximum of 3 credits.

MP 271 - Individual Lessons Piano (1-2)
Designed to facilitate the student's general music background and to address their skill level on the piano. Attention is also given to the individual's goals in learning to play the piano and an interest they may have in learning to play particular styles of piano music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 272 - Individual Lessons Organ (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the organ. Gives attention to the individual's goals in learning to play the organ and an interest they may have in learning to play particular styles of organ music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 274 - Individual Lessons Voice (1-2)
Provides individual instruction in voice. Students will focus on improving vocal technique in a variety of areas such as pitch matching, breath control, posture, and vocal quality. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 275 - Individual Lessons In Guitar (1-2)
Individual guitar lessons for intermediate level players are designed to facilitate the student's general music background and to address their skill level on the guitar including some more advanced instruction and skill training. Attention is also given to the individual's goals in learning to play the guitar and an interest they may have in learning to play particular styles of guitar music. Recommended: Students should have a basic knowledge of reading music, but it is not required. Note: Requires

additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 276 - Individual Lessons Singer/Songwriter (1-2)
Facilitates the development of the student's general music background and addresses their skill level as a singer/songwriter. Gives attention to the individual's goals in learning to play, sing, and compose popular music. Places emphasis on voice accompanied by guitar and/or piano. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 277 - Individual Lessons Composition (1-2)
For the intermediate composer, facilitates the development of the student's general music background and addresses their skill level as a composer. Gives attention to the individual's goals in learning to compose music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 281 - Individual Lesson Flute (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the flute. Gives attention to the individual's goals in learning to play the flute and any interest they may have in learning to play particular styles of flute music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 282 - Individual Lessons Tuba (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the tuba. Gives attention to the individual's goals in learning to play the tuba and any interest they may have in learning to play particular styles of tuba music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 283 - Individual Lessons Clarinet (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the clarinet. Gives attention to the individual's goals in learning to play the clarinet and any interest they may have in learning to play particular styles of clarinet music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 284 - Individual Lessons Saxophone (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the saxophone. Gives attention to the individual's goals in learning to play the saxophone and any interest they may have in learning to play particular styles of saxophone music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 285 - Individual Lessons Bassoon (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the bassoon. Gives attention to the individual's goals in learning to play the bassoon and an interest they may have in learning to play particular styles of bassoon music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 286 - Individual Lessons Trumpet (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the trumpet. Gives attention to the individual's goals in learning to play the trumpet and an interest they may have in learning to play particular styles of trumpet music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 287 - Individual Lessons French Horn (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the French horn. Gives attention to the individual's goals in learning to play the French horn and an interest they may have in learning to play particular styles of

French horn music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 288 - Individual Lessons Trombone (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the trombone. Gives attention to the individual's goals in learning to play the trombone and an interest they may have in learning to play particular styles of trombone music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 289 - Individual Lessons Oboe (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the oboe. Gives attention to the individual's goals in learning to play the oboe and an interest they may have in learning to play particular styles of oboe music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 291 - Individual Lessons Percussion (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on percussion. Gives attention to the individual's goals in learning to play percussion and an interest they may have in learning to play particular styles of percussion music. Note: Requires additional tutorial fee. Student must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 292 - Individual Lessons Violin (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the violin. Gives attention to the individual's goals in learning to play the violin and an interest they may have in learning to play particular styles of violin music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 293 - Individual Lessons Viola (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the viola. Gives attention to the individual's goals in learning to play the viola and an interest they may have in learning to play particular styles of viola music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 294 - Individual Lessons Double Bass (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the double bass. Gives attention to the individual's goals in learning to play the double bass and an interest they may have in learning to play particular styles of double bass music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MP 295 - Individual Lessons Cello (1-2)
For the intermediate player, facilitates the student's general music background and addresses their skill level on the cello. Gives attention to the individual's goals in learning to play the cello and an interest they may have in learning to play particular styles of cello music. Note: Requires additional tutorial fee. Students must contact the instructor to set up individual lesson times. May be repeated for a maximum of 6 credits.

MT3. - Mechatronics

MT3. 801 - Mechatronics Orientation (1)
Provides an introduction to the field of mechatronics. Exposes students to different methods for learning new material and requires the creation of a study plan that includes specific strategies for learning, studying, and managing schedules. Introduces scientific methodologies and several computer applications.

MT3. 802 - Service Skills for Technicians (3)
Emphasizes the importance of communicating effectively with people from various social and cultural backgrounds.

Focuses on the work place and employability. Incorporates effective troubleshooting and project management methods that involve leadership and people skills. Includes interview and job search techniques for obtaining employment in the student's chosen industry.

MT3. 803 - Industrial Safety (2)
Focuses on how to protect oneself and fellow workers from workplace accidents. Covers topics such as electrical safety, personal protective equipment, fall protection, confined space entry, hazardous materials, fires, and Lockout/Tag out. Emphasizes personal responsibility for one's own safety. Includes the development of a personalized safety manual.

MT3. 805 - Predictive & Preventive Maintenance (3)
Covers how to manage the computerized maintenance management (CMM) systems used in most modern plants and facilities. Stresses the use of CMM systems as a troubleshooting tool and as a method for improving energy efficiency. Uses boiler operation and maintenance as the case study.

MT3. 812 - Mechanical Systems (4)
This lab-based course introduces students to fundamental mechanical skills, concepts and practices. Intended for mechatronics technicians, the course includes but is not limited to: precision measurement, technical shop math, mechanical fasteners, hand and power tools, and fundamentals of rigging and lifting. Safe application of industrial skills in the workplace is emphasized. This course contains a portion of the embedded computation requirement for Related Instruction.

MT3. 815 - Mechatronics Skills Lab (1 TO 6)

Individual lab practice to improve mechatronics skills. May also be used for special projects. To be offered every term subject to instructor approval. May be repeated for a maximum of 6 credits.

MT3. 816 - CAD for Factory Automation (4)
Introduces the application and functions of computer aided drafting (CAD). Emphasizes the use of AutoCAD software for simple mechanical part drawings, expanding into process flow diagrams and electrical diagrams.

MT3. 817 - Drive Systems (2)
Explores the troubleshooting and maintenance of drive systems. Covers fundamentals of vibration analysis and system alignment in the lab component. Places emphasis on effective installation, removal, and maintenance of belt, chain and gear drives to maximize component lifecycle and energy efficiency.

MT3. 819 - Bearings & Lube Systems (2)
Explores the troubleshooting and maintenance of bearings and lubrication systems. Includes training in fundamentals of vibration and oil analysis, handling and mounting bearings, and operating lubrication systems. Emphasizes energy efficiency.

MT3. 821 - Electrical Systems Troubleshooting (4)
Uses electrical troubleshooting theory in troubleshooting common electrical problems: low voltage, high voltage, unwanted resistance, open circuits, high resistance shorts to ground, and current and voltage unbalance. Covers efficiency technology and sustainable practices.

MT3. 822 - Troubleshooting Motors & Controls (4)
Explores troubleshooting and maintaining motor controls, as well as single- and three-phase motors. Stresses the analysis of motor control schematics, the use of advanced digital multimeters, and motor efficiency. Introduces ladder logic as a means of understanding motor controls, leading toward the operation of programmable logic controllers (PLCs) and automated control systems. Embeds effective troubleshooting methodologies.

MT3. 823 - Industrial Sensors & Actuators (3)

Gives students a working knowledge of a variety of industrial sensors and actuators and their operation in control systems. Students will learn how different types of sensors operate and how to select the appropriate sensors. Students will learn to install, maintain and troubleshoot different types of sensors and actuators. Students will construct electrical circuits that illustrate the function of various types of sensors.

MT3. 824 - Programmable Logic Controllers (3)
Provides a hands-on introduction to programmable logic controllers (PLCs), industrial computers used to control electrical and mechanical systems, with emphasis placed on effective selection, installation, and troubleshooting of PLC systems. Introduces PLC ladder logic programming and covers field troubleshooting of input and output devices.

Prerequisite: MT3. 822 with a grade of C or better.

MT3. 825 - Process Control & Instrumentation (3)
Provides an introduction to process control and instrumentation. Students will develop a working production line that includes sensors, pneumatics, PLCs and motor controls. Energy efficiency and maintenance,

troubleshooting, and repair of control systems is emphasized.

MT3. 826 - Advanced PLC Troubleshooting (3)
Develops advanced skills in programming programmable logic controllers (PLCs). Covers converting common industrial control circuits to PLC ladder logic as well as creating programs from narrative descriptions. Places special emphasis on interfacing the PLC with a selection of electro-pneumatic control devices. Also covers interpreting PLC data sheets and the systemic approach to testing and troubleshooting of PLC programs.

MT3. 827 - Automated Material Handling (3)
An introduction to automation and production-line technologies. Students will develop a working production line that includes sensor technology, electro-pneumatics, motor control technology, and programmed control. Maintenance, troubleshooting, and repair of manufacturing systems is emphasized as is energy efficiency.

MT3. 830 - Industrial Pneumatics Systems (3)
Learn to analyze fundamental pneumatic schematics, how to troubleshoot common pneumatic problems, how to maintain and repair pneumatic systems used in a variety of production applications, and how to promote energy efficiency in pneumatic systems. Understanding pneumatic circuits is critical to working with all types of industrial control systems.

MT3. 832 - Energy & Sustainability (3)
Explores fundamental concepts and skills related to energy efficiency and sustainability in industrial plants and commercial office buildings. Includes discussion of alternative energy sources such as wind, solar, biomass, hydro, geothermal, and small-scale nuclear. Creates an opportunity to conduct a Level 1 energy audit using testing tools like infrared (IR) thermographic cameras and light meters. Analyzes the interaction of the laws of thermodynamics, the environment, business economics, and production operations.

MT3. 833 - Principles of Technology (5)

Focuses on applying physical concepts and formulae to technology found in the industrial workplace. Students will develop and strengthen critical thinking and problem solving skills required to function and excel inrapidly changing and increasingly complex workplace environments. Lab experiments are intended to reinforce and enhance the scientific principles discussed in class as well as providing an opportunity to learn to work effectively in groups. The impact of technology on energy efficiency in the workplace is studied. This course contains a portion of the embedded computation requirement for Related Instruction.

MT3. 834 - Principles of Technology II (5)
Focuses on applying physical concepts and formulae to technology found in the industrial workplace. Students will develop and strengthen critical thinking and problem solving skills required to function and excel in rapidly changing and increasingly complex workplace environments. Lab experiments are intended to reinforce and enhance the scientific principles discussed in class as well as providing an opportunity to learn to work effectively in groups. The impact of technology on energy efficiency in the workplace is studied. This course contains a portion of the embedded computation requirement for Related Instruction.

Prerequisite: Prerequisite: MT3. 833 Principles of Technology with a grade of C or better.

MT3. 836 - Industrial Hydraulics Systems (3)
Explores how to analyze fundamental hydraulic schematics, troubleshoot common hydraulic problems, maintain and repair hydraulic systems, and promote energy efficiency in a variety of production applications. Includes constructing, analyzing, and troubleshooting common hydraulic circuits.

MT3. 846 - Pumps and Valves (2)
Examines troubleshooting, maintaining, and repairing valves and industrial pumps. Covers the various types of positive-displacement pumps and centrifugal pumps, considering which is best for any specific application. Reviews many different types of valves and introduces the characteristics of each.

MT3. 847 - HVAC System Controls (3)
Introduce HVAC ducting systems and the operation of direct digital control (DDC) systems. Examines the use of the DDC system as an aid in troubleshooting and promoting energy efficiency and indoor air quality in building systems and clean-room operations.

MT3. 848 - EPA Technician Certification (2)
Includes studying, practicing, and reviewing Environmental Protection Agency (EPA) requirements in order to sit for and pass the Energy Service Company (ESCO) EPA-608 certification exam. Provides test preparation material and instructor-generated content. Entails scheduling a test date with the instructor when the student is judged to be adequately prepared and sitting for the exam from the ESCO HVAC Excellence Program

Corequisite: MT3.855 .

MT3. 849 - Heating Systems (2)
Covers the operation and servicing of oil, gas, and electric furnaces and heating systems. Addresses all relevant safety and energy efficiency concerns. Also discusses heat pumps and split systems.

MT3. 854 - Refrigeration Servicing (2)
Provides an introduction to refrigeration systems. Explains refrigeration theory and reinforces knowledge gained through lab activities. Includes topics such as taking pressures, identifying refrigerants, recovering and recycling refrigerants, evacuating, and charging refrigeration systems. Covers and follows all applicable safety precautions and EPA-governed environmental regulations.

MT3. 855 - Refrigeration Troubleshooting (2)
A continuation of MT3.854 Refrigeration Servicing. Includes troubleshooting and repairing refrigeration systems; evaluating system operation; checking superheat and sub-cooling; testing compressors, evaporators, condensers, and expansion devices; troubleshooting hot and cold calls; and servicing for energy efficiency.

MT3. 897 - Capstone Project I (3)
Begins the journey of creating an automated mechatronics project. Incorporates ideas from various aspects of mechatronics (fluid power, mechanical systems, electrical sensors and controls, etc.). Includes working as a group to plan and design a project, troubleshoot system faults, and optimize operation. Requires substantial research activity and lab time.

MT3. 898 - Capstone Project II (3)
Students continue the fabrication of their automated mechatronics project. Includes work on design, troubleshooting system faults, and optimizing system operation. Requires substantial research activity and lab time.

Prerequisite: MT 3.897 with a grade of C or better.

MT3. 899 - Capstone Project & Assessment (3)
Students complete the fabrication of their automated project using skills learned in previous mechatronics coursework. Incorporates documenting all aspects of the project, troubleshooting system's faults, and devising a plan for optimizing system operation. Requires substantial research activity and lab time. Includes a third-party mechatronics assessment to determine the understanding of key mechatronics concepts.

Prerequisite: MT3.898 with a grade of C or better.

MTH - Mathematics

MTH 015 - Math Prep Lab (2)
Math Prep Lab is an individually paced course designed to allow students to improve their math placement. It is ideal for students who need to take several math courses before entering a program who have seen the material before and just need to "fill in the gaps". Math Prep Lab can also provide an environment for students to learn prerequisite math skills in order to be successful in their program math requirement(s). May be repeated for a maximum of 4 credits.

MTH 075 - Variables and Linear Equations (4)
An introductory algebra course covering variables, writing and solving linear equations, graphing linear equations, and applications of linear models including proportions and systems of equations. Group work, problem-solving, and communication are emphasized in this course. Students will develop skills in conversion of measurement units and scientific notation.

MTH 095 - Intermediate Algebra (4)
Designed for the student who is familiar with elementary algebra, as well as basic geometry and statistics . Topics include graphing quadratic, and other functions; multiplying and factoring polynomials; performing operations with rational expressions; solving systems of linear equations; solving quadratic equations by factoring; performing arithmetic with complex numbers; developing and applying mathematical models. Problem solving is emphasized throughout the course. Application problems are realistic with some data to be collected, analyzed and discussed in a group setting with results submitted in written form.

Prerequisite: Prerequisite: MTH 075 Variables and Linear Equations or equivalent with a grade of C or better.

MTH 098 - Foundations for Contemporary Math (5)
A one-term course to prepare students for a liberal arts mathematics course (MTH 105Z). Covers core concepts from arithmetic, algebra, and introductory statistics that are needed to understand the material in the liberal arts mathematics course. This course is designed for students who do NOT want to major in mathematics, science, engineering or computer science and who do not need MTH 111Z Precalculus I: Functions. It is assumed students have high school algebra in their background. Students will need time outside of class to access online materials and complete some homework using a computer. Excel

will be taught and used daily. Recommended: Placement in MTH 075 Variables and Linear Equations.

MTH 105Q - Math in Society Support (1)
Focuses on the foundational skills and concepts needed to be persistent and successful in MTH 105Z Math in Society. Provides students with appropriate support as needed in arithmetic, algebra, problem solving, technology, and study skills in an interactive setting.

Corequisite: Corequisite: MTH 105Z Math in Society.

MTH 105Z - Math in Society (4)
An exploration of present-day applications of mathematics focused on developing numeracy. Major topics include quantitative reasoning and problem-solving strategies, probability and statistics, and financial mathematics; these topics are to be weighted approximately equally. This course emphasizes mathematical literacy and communication, relevant everyday applications, and the appropriate use of current technology.

Corequisite: Corequisite: MTH 105Q Math in Society Support. Students may seek permission to opt out of the corequisite course from their math instructor or a math advisor. Students who have passed MTH 075 Variables and Linear Equations or higher with a grade of C or higher are not required to take the corequisite course.

MTH 111Q - Precalculus I: Functions Support (1)
Focuses on the foundational skills and concepts needed to be persistent and successful in MTH 111Z Precalculus I: Functions. Provides students with appropriate support as needed in algebra, problem solving, technology, and study skills in an interactive setting.

Corequisite: Corequisite: MTH 111Z Precalculus I: Functions.

MTH 111Z - Precalculus I: Functions (4)
A course primarily designed for students preparing for trigonometry or calculus. This course focuses on functions and their properties, including polynomial, rational, exponential, logarithmic, piecewise-defined, and inverse functions. These topics will be explored symbolically, numerically, and graphically in real-life applications and interpreted in context. This course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of present-day technology.

Prerequisite: Prerequisite: MTH 075 Variables and Linear Equations with a grade of C or better. Corequisite: Corequisite: MTH 111Q Precalculus I: Functions Support. Students may seek permission to opt out of the corequisite course from their math instructor or a math advisor. Students who passed MTH 095 Intermediate Algebra with a grade of C or higher are not required to take the corequisite course.

MTH 112Z - Precalculus II: Trigonometry (4)
A course primarily designed for students preparing for calculus and related disciplines. This course explores trigonometric functions and their applications as well as the language and measurement of angles, triangles, circles, and vectors. These topics will be explored symbolically, numerically, and graphically in real-life applications and interpreted in context. This course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of present-day technology.

Prerequisite: MTH 111Z Precalculus I: Functions with a grade of C or better.

MTH 131 - Intro to LaTeX (1)
Explores the power of LaTeX for use at school, home, or the workplace for creating and typesetting mathematical and scientific documents.

MTH 211 - Fund Of Elementary Math I (4)

One of three courses in the mathematics cluster for prospective elementary and middle school teachers. Develops the understanding of basic mathematical concepts necessary for teaching mathematics in grades K-8. Topics include problem solving, whole numbers, algorithms for computation, numeration systems, number theory and fractions.

Prerequisite: Prerequisite: MTH 095 Intermediate Algebra or equivalent with a grade of C or better.

MTH 212 - Fund Of Elementary Math II (4)

One of three courses in the mathematics cluster for prospective elementary and middle school teachers. Develops the understanding of basic mathematical concepts necessary for teaching mathematics in grades K-8. Topics include decimals, percent, ratio and proportion, integers, real numbers, basic statistics and probability.

Prerequisite: Prerequisite: MTH 211 Fundamentals of Elementary Mathematics I with a grade of C or better.

MTH 213 - Fund Of Elementary Math III (4)

One of three courses in the mathematics cluster for prospective elementary and middle school teachers. Develops the understanding of basic mathematical concepts necessary for teaching mathematics in grades K-8. Covers basic geometry topics including shapes and their properties; symmetry; angle measure; measurement of length, area and volume; congruence and similarity; Pythagorean Theorem; and coordinate geometry. Required: MTH 097 Practical Geometry or equivalent.

Prerequisite: Prerequisite: MTH 095 Intermediate Algebra with a grade of C or better.

MTH 231 - Elements Of Discrete Math (4)

An introductory course in discrete mathematics covering elementary logic and set theory, functions, relations, direct and indirect proof techniques, mathematical induction, recursion, elementary combinatorics, basic graph theory, and minimal spanning trees. Applications of these topics in computer science are stressed.

Prerequisite: Prerequisite: MTH 112Z Precalculus II: Trigonometry or equivalent and MTH 251 Differential Calculus with a grade of C or better.

MTH 241 - Calculus For Bio/Mgmnt/Soc Sci (4)

Introduces calculus as applied to business, the social sciences and life sciences. It uses an intuitive development of the calculus of polynomial, exponential and logarithmic functions, extrema theory and applications.

Prerequisite: Prerequisite: MTH 111Z Precalculus I: Functions with a grade of C or better.

MTH 245 - Math For Bio, Mgmt, Soc Science (4)

A survey course of discrete mathematics for non-physical science majors. Topics include systems of inequalities, linear programming, probability and probability distributions, and an introduction to descriptive statistics. The course emphasizes problem solving through the use of computer spreadsheets.

Prerequisite: Prerequisite: MTH 111Z Precalculus I: Functions with a grade of C or better.

MTH 251Z - Differential Calculus (4)
This course explores limits, continuity, derivatives, and their applications for real-valued functions of a single variable. These topics will be explored graphically, numerically, and symbolically in real-life applications. This course emphasizes abstraction, problem-solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of technology.

Prerequisite: Prerequisite: MTH 112Z Precalculus II: Trigonometry or equivalent with a grade of C or better.

MTH 252Z - Integral Calculus (4)
This course explores Riemann sums, definite integrals, and indefinite integrals for real-valued functions of a single variable. These topics will be explored graphically, numerically, and symbolically in real-life applications. This course emphasizes abstraction, problem-solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of technology.

Prerequisite: Prerequisite: MTH 251Z Differential Calculus with a grade of C or better.

MTH 253Z - Calculus: Sequences and Series (4)
This course explores real-valued sequences and series, including power and Taylor series. Topics include convergence and divergence tests and applications. These topics will be explored graphically, numerically, and symbolically. This course emphasizes abstraction, problem-solving, reasoning, communication, connections with other disciplines, and the appropriate use of technology.

Prerequisite: Prerequisite: MTH 252Z Integral Calculus with a grade of C or better.

MTH 254 - Multivariable Calculus (4)

The fourth course in the calculus sequence for students majoring in mathematics, science and engineering. Topics include vectors in 2 and 3- space, graphs, contour maps and equations of multivariable functions and partial derivatives, directional derivatives, optimization of services, cylindrical and spherical coordinates, multiple integrals and their applications.

Prerequisite: Prerequisite: MTH 252Z Integral Calculus or equivalent with a grade of C or better.

MTH 255 - Vector Calculus (4)

An intermediate treatment of multivariate calculus with a vector approach. Provides the mathematical skills for courses in advanced calculus, fluid mechanics and electromagnetic theory.

Prerequisite: Prerequisite: MTH 254 Multivariable Calculus with a grade of C or better.

MTH 256 - Applied Differential Equations (4)

An introductory course in differential equations for students majoring in mathematics, sciences, or engineering. Students are introduced to a variety of first and second-order differential equations that model changing quantities, including population dynamics, forced and unforced mechanical vibrations, and electrical charge in a simple circuit. The course includes both analytical and numerical solutions of typical first and second order differential equations, along with an introduction to the method of Laplace transforms for solving differential equations.

Prerequisite: Prerequisite: MTH 254 Multivariable Calculus or equivalent with a grade of C or better. Offered: Fall & Spring only.

MTH 264 - Introduction to Matrix Algebra (2)
An introductory matrix methods course for students majoring in sciences and engineering. Topics include matrix algebra, matrix transformations, determinants, systematic solutions to linear systems, and eigenvalue problems. Prerequisite: MTH 252 or equivalent with a grade of C or better.

Prerequisite: MTH 252Z Integral Calculus with a grade of C or better.

MTH 264B - Introduction to Matrix Computations (1)
An introduction to programming commands to perform introductory matrix algebra for students taking MTH 264 Introduction to Matrix Algebra. Topics include using a relevant programming language, such as Python, to row reduce matrices, find matrix inverses, calculate determinants, compute eigenvalues and eigenvectors, and graph basic solutions in 2D and 3D. Required: Knowledge of matrix algebra topics listed above. Recommended: concurrent enrollment or prior completion of MTH 264 Introduction to Matrix Algebra.

MTH 265 - Introduction to Series (2)
A series calculus course for students majoring in engineering and the sciences. Topics include convergence and divergence of numerical series, power series and their analytic properties, Taylor series expansion and Taylor polynomials. Prerequisite: MTH 252 or equivalent with a grade of C or better.

Prerequisite: MTH 252Z Integral Calculus with a grade of C or better.

MTH 280 - CWE MATH (1 TO 12)

Designed to give students practical experience in supervised employment related to mathematics. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

MUS - Music

MUS 101 - Music Fundamentals (3)
Introduction to the basics of music reading and writing from the very beginning. Studies basic music theory, scales, chord recognition, music analysis, interval relationships, and an introduction to composing one's own music.

MUS 103 - Introduction to Music Education (3)
Provides an introduction to the practice of teaching music in public schools in the United States. Includes teaching and learning music through reading, discussion, creative projects, field observations, and peer teaching experiences. Provides a breadth of experiences so prospective teachers can make informed decisions regarding their career path.

Prerequisite: MUS 121 with a grade of C or better.

MUS 105 - Introduction to Rock Music (3)
Examines the relationship between rock music and society, emphasizing the musical and lyrical significance of rock music as contemporary social commentary. Students will identify and analyze a variety of complex practices, values and beliefs defined both culturally and historically through music including meanings of difference and change.

MUS 106 - History of Hip-Hop and Rap Music (3)
Provides the student with an opportunity to explore the musical, social, and cultural aspects of hip-hop culture and rap music from its birth in the 1970's to its development through today. Explores important artists and landmark recordings in this style.

MUS 107 - History of Country Music (3)
Explores the musical, social, and cultural aspects of country music and its sub-genres from its birth in the early 1900s to its development through today, while covering important artists in this style. Identifies and analyzes complex practices, values, and beliefs, and the cultural and historically defined meanings of difference in the country music world. Explores how culturally-based assumptions influence perceptions related to country music and the people in it. Examines how these culturally-based assumptions influence perceptions and stigmas

relating to country music culture and compares/contrasts attitudes and values of specific eras of this culture. Analyzes pertinent artists, events, and landmark recordings in this process.

MUS 108 - Music Cultures of the World (3)
Survey of the world's music with attention to musical styles and cultural contexts. Included are the musical and cultural histories of Ociania, Indonesia, Africa, Asia, and Latin America.

MUS 109 - Concert Choir (1)
Concert choir is a traditional choral performance class that includes the singing of a wide range of choral music from around the world. Participation in final concert is required. This ensemble is open to all members of the college community. Audition for vocal placement with the instructor. May be repeated for a maximum of 3 credits.

MUS 110 - Concert Band (1)
In partnership with the Willamette Valley Concert Band, the Concert Band is a non-auditioned traditional instrumental performance class that includes the performance of a wide range of music. Participation in the final concert is required. This ensemble is open to all members of the college community. May be repeated for a maximum of 3 credits.

MUS 113 - Aural Skills I (1)
Develops some of the most important skills a musician should have. Students will concentrate on their abilities to use Curwen hand-signs, identify triad and scale quality, compare and contrast written and played music, audiate written notation including dictation exercises and sight-singing, and conduct while singing. This course is intended for both music and non-music majors. Music majors should take this course with MUS 122.

Corequisite: Music Majors must take MUS 121 concurrently with this course.

MUS 114 - Aural Skills II (1)
A course for students to develop some of the most important skills a musician should have. The skills in this course will build on the skills learned in MUS 113: Aural Skills I. Students will concentrate on their abilities to hear relationships in music, notate music correctly, and to audiate written notation including dictation exercises and sight-singing. This course is intended for both music and non-music majors. Music majors should take this course with MUS 122.

Prerequisite: MUS 113 with a grade of C or better.
Corequisite: Music Majors must take MUS 122 concurrently with this course.

MUS 115 - Aural Skills III (1)
A course for students to continue to develop some of the most important skills a musician should have. The skills in this course will build on the skills learned in MUS 114: Aural Skills II. Students will concentrate on their abilities to hear relationships in music, notate music correctly and to audiate written notation including dictation exercises and sight-singing. This course is intended for both music and non-music major. Music majors should take this course with MUS 123.

Prerequisite: MUS 114 with a grade of C or better.
Corequisite: Music Majors must take MUS 123 concurrently with this course.

MUS 116 - Chamber Choir (2)
Chamber Choir is a performing group that includes the singing and performing of advanced choral literature, including madrigals, motets, jazz arrangements and musical theater. Students will develop high-level sight reading and aural skills. Participation in this course may include a number of off-campus performances, as well as a final concert. Required: Audition and Instructor Permission. Note: It is recommended you also register for MP 174 (p. 173) Individual Lessons Voice concurrently with this course. May be repeated for a maximum of 6 credits

MUS 117 - Symphony Orchestra (1)
In conjunction with the Willamette Valley Symphony, provides an opportunity for participation in a symphony orchestra. This large ensemble of 65-80 players performs a wide variety of orchestral music across genres and eras. Required: Audition. An unsuccessful audition will result in disenrollment. May be repeated for a maximum of 3 credits.

MUS 118 - Small Ensemble (1)
Explores ensemble rehearsal techniques and repertoire. Focuses on high-level sight reading and aural skills. Includes participation in the form of a number of off-campus performances, as well as a final concert. May be repeated for a maximum of 3 credits.

MUS 121 - Literature and Materials of Music I (3)
Covers fundamentals of music theory along with a brief introduction to Western art music. This requires students to learn to read and write all notes in treble and bass clef, and all common scales, intervals, triads and seventh chords, using key signatures. They also learn to recognize basic rhythms and write them down.

MUS 122 - Literature and Materials of Music II (3)
An integrated approach to the study of Western art music, including repertory, melodic, harmonic, and rhythmic components, formal organization, and composition. Recommended: MUS 114 Aural Skills I and Piano Lessons taken concurrently with this course.

Prerequisite: MUS 121 Literature and Materials of Music I with a grade of C or better.

MUS 123 - Literature and Materials of Music III (3)
An integrated approach to the study of Western art music, including repertory, melodic, harmonic, and rhythmic components, formal organization, and composition. Recommended: MUS 115 Aural Skills II and Piano Lessons taken concurrently with this course.

Prerequisite: MUS 122 Literature and Materials of Music II with a grade of C or better.

MUS 131 - Group Piano I (1)
Provides beginning group instruction in piano skills designed for music majors and non-music majors. Includes some basic instruction in music reading and proper piano technique including posture, fingering, reading, and more.

MUS 132 - Group Piano II (1)
The second course in a six-course sequence. Provides beginning group instruction in piano skills designed for music majors and non-music majors. Includes instruction on triads and dominant 7ths in inversion, play block chord accompaniment, and the use of roman numeral chord symbols while playing.

Prerequisite: Prerequisite: MUS 131 Group Piano I with a grade of C or better, or instructor approval.

MUS 133 - Group Piano III (1)
A continuation of MUS 132 Group Piano II, provides beginning group instruction in piano skills designed for music majors and non-music majors. Includes instruction in playing forms, scales, and extended five-finger positions.

Prerequisite: Prerequisite: MUS 132 Group Piano II with a grade of C or better, or instructor approval.

MUS 161 - Music Appreciation (3)
Studies music through the elements or language of music, musical forms and the history of music. This includes the identification and analysis of a variety of different culturally and historically defined practices related to the development of music, its composition and performance.

MUS 171 - Music Production Fundamentals I: Intro to Music Production Fundamentals and Analog Audio (3)
The first course in a three-course sequence. Covers fundamental skills in music production. Emphasizes theory and practical application of current recording technology, with a focus on analog production. Covers physics, analog recording, various hardware platforms, composition, and audio production.

MUS 172 - Music Production Fundamentals II: Intro to Digital Audio (3)
The second course in a three-course sequence. Develops digital music technology skills. Presents foundations in Digital Audio Workstations (DAW), MIDI (musical instrument digital interface), audio recording, sequencing, effects, and applied production including web and sound design. Covers composition and songwriting.

Prerequisite: Completed MUS 171 with a grade of C or better.

MUS 173 - Music Production Fundamentals III: Intro to Live and Studio Recording (3)
The third course in a three-course sequence. Develops specialized skills used in audio engineering. Uses techniques and theories discussed in the previous two courses. Includes the use of various audio equipment used in sound production including digital audio workstations (DAWs), microphones, recording equipment, patch bays, effects, musical instrument digital interface (MIDI), and various video equipment. Individual and collaborative projects will be a major component of this course.

Prerequisite: Completed MUS 172 with a grade of C or better.

MUS 209 - Concert Choir (1)
Concert choir is a traditional choral performance class that includes the singing of a wide range of choral music from

around the world. Participation in final concert is required. This ensemble is open to all members of the college community. Audition for vocal placement with the instructor. May be repeated for a maximum of 3 credits.

MUS 210 - Concert Band (1)
In partnership with the Willamette Valley Concert Band, the Concert Band is a non-auditioned traditional instrumental performance class that includes the performance of a wide range of music. Participation in the final concert is required. This ensemble is open to all members of the college community. May be repeated for a maximum of 3 credits

MUS 213 - Aural Skills IV (1)
Provides a continuation of MUS 115, with the goal of improving the ability to reproduce what is seen on the page and write down what is heard, as well as listen with greater discrimination. Covers melodic and harmonic dictation, error detection, sight-singing, rhythm study and comparative listening. Music majors should also register for MUS 221 concurrently with this course.

Prerequisite: MUS 115 with a grade of C or better. Corequisite: Music Majors must take MUS 221 concurrently with this course.

MUS 214 - Aural Skills V (1)
Provides a continuation of MUS 213, with the same goal of improving the ability to reproduce what is seen and write down what is heard, as well as listen with discrimination. Covers a mix of melodic and harmonic dictation, error detection, sight singing, rhythm study and comparative listening. Music majors should also register for MUS 222 concurrently with this course.

Prerequisite: MUS 213 with a grade of C or better. Corequisite: Music Majors must take MUS 222 concurrently with this course.

MUS 215 - Aural Skills VI (1)
Provides a continuation of MUS 214, with the same goal of improving the ability to reproduce what is seen and write down what is heard, as well as listen with discrimination. Covers the same mix of melodic and harmonic dictation, error detection, sight singing (some of it modal), rhythm study and comparative listening. Places emphasis on harmonic background of melody. As part of sight singing, consists of sitting at the piano playing chords for oneself and/or others in the class to sing. Dictation will include melody with simple background chords. Music majors should also register for MUS 223 concurrently with this course.

Prerequisite: MUS 214 with a grade of C or better. Corequisite: Music Majors must take MUS 223 concurrently with this course.

MUS 216 - Chamber Choir (2)
Chamber Choir is a performing group that includes the singing and performing of advanced choral literature, including madrigals, motets, jazz arrangements and musical theater. Students will develop high-level sight reading and aural skills. Participation in this course may include a number of off-campus performances, as well as a final concert. Required: Audition and instructor permission. Note: It is recommended you also register for MP 274 (p. 175) Individual Lessons Voice concurrently with this course. May be repeated for a maximum of 6 credits.

MUS 217 - Symphony Orchestra (1)
In conjunction with the Willamette Valley Symphony, provides an opportunity for participation in a symphony orchestra. This large ensemble of 65-80 players performs a wide variety of orchestral music across genres and eras. Required: Audition. An unsuccessful audition will result in disenrollment. May be repeated for a maximum of 3 credits.

MUS 218 - Small Ensemble (1)
Explores ensemble rehearsal techniques and repertoire. Focuses on high-level sight reading and aural skills. Includes participation in the form of a number of off-campus performances, as well as a final concert. May be repeated for a maximum of 3 credits.

MUS 221 - Literature and Materials of Music IV (3)
The fourth course of a six-course series. Continues work in advanced chromatic harmony, modulation, analysis, studying and writing about 20th century music. Includes composing and performing one's own music. Recommended that MUS 213 Aural Skills III and either Piano Lessons or Group Piano taken concurrently with this course. Offered Fall Term only.

Prerequisite: Prerequisite: MUS 123 Literature and Materials of Music III with a grade of C or better. Offered: Offered Fall only.

MUS 222 - Literature and Materials of Music V (3)
Continues work in advanced chromatic harmony, modulation, analysis, studying and writing about 20th Century music. Includes composing and performing one's own music.

Prerequisite: MUS 221 Literature and Materials of Music IV with a grade of C or better.

MUS 223 - Literature and Materials of Music VI (3)
Covers material from Impressionism throughout the entire 20th and into the 21st Century. Addresses in detail the diatonic church modes, synthetic scales, polytonality, serialism, aleatoric techniques, and electronic music, as well as the rhythm and meter associated with music of the 20th Century.

Prerequisite: MUS 222 Literature and Materials of Music V with a grade of C or better.

MUS 231 - Group Piano IV (1)
Provides advanced group piano instruction in piano skills designed for music majors. Includes more advanced instruction in music reading, and proper piano technique including posture, fingering, reading, and more. This course may be repeated for up to 3 credits.

Prerequisite: Prerequisite: MUS 131 Group Piano I with a grade of C or better.

MUS 232 - Group Piano V (1)
A continuation of MUS 231 Group Piano IV, provides advanced group piano instruction in piano skills designed for music majors. Includes more advanced instruction in improvisation, minor scales, and whole tone scales.

Prerequisite: Prerequisite: MUS 231 Group Piano IV with a grade of C or better, or instructor approval.

MUS 233 - Group Piano VI (1)
A continuation of MUS 232 Group Piano V, provides advanced group piano instruction in piano skills designed for music majors. Includes instruction in lead sheet, different types of accompaniments, and classical and popular repertoire.

Prerequisite: Prerequisite: MUS 232 Group Piano V with a grade of C or better, or instructor approval.

MUS 271 - Audio Engineering I (3)
The first course in a three-course sequence. Develops the tools to work and function as a recording engineer in a live concert and studio recording environment. Includes studio and room acoustics, microphone selection and positioning, recording technology, tracking, audio editing, signal processing, recording process, workflow, and professionalism.

Prerequisite: Completed MUS 173 with a grade of C or better.

MUS 272 - Audio Engineering II (3)
The second course in a three-course series. Develops the tools to work and function as a recording engineer in live or studio environments. Includes operation of outboard mic preamps and signal processors, signal flow and configuration of various signal paths, microphone utilization and basic multi-track recordings of various instruments, operating the mixing console, tracking to different mediums, and other topics.

Prerequisite: Completed MUS 271 with a grade of C or better.

MUS 273 - Audio Engineering III (3)
The third course of a three-course sequence. Develops the tools to work and function as a recording engineer in a live or studio recording environment. Includes advanced multi-track recording, sampling musical instrument digital interfacing (MIDI) and recording, studio and rehearsal etiquette and preparation, selecting a recording format, console logistics, initial tracking, overdubbing, compression techniques, EQ techniques, signal processing, console automation, mixing, and mastering.

Prerequisite: Completed MUS 272 with a grade of C or better.

MUS 280 - CWE MUSIC (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to music. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

NCWD - Non-Credit Welding

NCWD 101 - JATC Pipe Welding Apprenticeship Year 1 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding

Apprenticeship program. 72 hours of related instruction in the term.

NCWD 102 - JATC Pipe Welding Apprenticeship Year 1 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 201 - JATC Pipe Welding Apprenticeship Year 2 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 202 - JATC Pipe Welding Apprenticeship Year 2 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 301 - JATC Pipe Welding Apprenticeship Year 3 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 302 - JATC Pipe Welding Apprenticeship Year 3 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 401 - JATC Pipe Welding Apprenticeship Year 4 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NCWD 402 - JATC Pipe Welding Apprenticeship Year 4 (72 Hours)
Related instruction/training for the JATC (Joint Apprenticeship Training Committee) Pipe Welding Apprenticeship program. 72 hours of related instruction in the term.

NDT - Nondestructive Testing Evaluation

NDT 100 - Intro to Nondestructive Test (3)

This course introduces the student to a variety of nondestructive testing methods that the college currently offers including Penetrant and Magnetic Particle Testing, Radiographic Testing, Visual Inspection, and Ultrasonic Testing. Students will given a brief introduction of each technology with opportunities to have some hands-on activities. Arrangements will be made to visit local companies currently employing these technologies and time speak with the technicians.

NDT 101 - Prepping For Success in CTE (3)
Provides students the tools, software training, and information to successfully navigate classes at LBCC, specifically the CTE programs. Furthermore, students will work on work related soft-skills, building resumes, interviewing and CTE specific skills including researching industry partners and reading inspection prints. This class should be taken in place of HD 120/121.

NDT 110 - Visual Inspection (5)
This course follows the Society of Nondestructive Testing Recommended Practice, SNT-TC-1A most current edition for personal qualification and certification in Nondestructive Testing and meets or exceeds the minimum requirements. It covers basic principles, processes and equipment used in visual testing and addresses advantages and disadvantages of various methods. Students will perform a variety of hands-on exercises that relate directly to industry practices.

NDT 121 - Liquid Penetrant Level I & II (4)
Follows the current edition of American Society for Nondestructive Testing Recommended Practice SNT-TC-1A for personnel qualification and certification in nondestructive testing and meets or exceeds all minimum requirements. Covers basic principles, processes, and equipment used in liquid penetrant inspection. Addresses advantages and disadvantages of other test methods. Provides an opportunity to perform a variety of hands-on exercises that relate to industry practices. All material safety data sheets are made available.

NDT 125 - Magnetic Particle Testing Level I and II (4)
Follows the current edition of American Society for Nondestructive Testing Recommended Practice SNT-TC-1A for personnel qualification and certification in nondestructive testing and meets or exceeds all minimum requirements. Covers basic principles, processes, and equipment used in magnetic particle inspection. Addresses advantages and disadvantages of other test methods. Provides an opportunity to perform a variety of hands-on exercises that relate to industry practices. All material safety data sheets are made available.

NDT 130 - Radiation Safety Training (5)
This course is designed to meet the training requirements for formal certification in Radiation Safety for both X-ray and gamma Radiographers. This course exceeds the recommendations and training outline set forth by the NRC training manual. It covers personal safety and protection, controlling radiation dose, personal monitoring, survey instruments, biological effects of radiation, exposure devices, emergency procedures, and storage and shipment of devices and sources.

NDT 140 - Radiographic Testing Level I (5)
This course follows the Society of Nondestructive Testing Recommended Practice, SNT-TC-1A most current edition for personal qualification and certification in Nondestructive Testing and meets or exceeds the minimum requirements. It covers history of radioactive materials, properties of matter and radioactive materials, types of radiation x-ray and gamma exposure devices and radiation sources, and a review of safety principles. Students will perform a variety of hands-on exercises that relate directly to industry practices.

Prerequisite: Prerequisite: NDT 130 Radiation Safety Training with a grade of C or better.

NDT 150 - Ultrasonic Testing Level I (5)
This course follows the Society of Nondestructive Testing Recommended Practice, SNT-TC-1A most current edition for personal qualification and certification in Nondestructive Testing and meets or exceeds the minimum requirements. It covers the historical background of ultrasonics and applications, basic principles of acoustics, types of equipment used and calibration methods. Students will perform a variety of hands-on exercises that relate directly to industry practices.

NDT 160 - Introduction to Metallurgy (5)
This course explores basic metallurgical principles, materials evaluation, metallography, mechanical, physical, and chemical properties and the effects of fabrication on metals. Nondestructive Testing students will benefit from this knowledge as they perform their inspections on a variety of fabrications, castings and repairs.

NDT 181 - Math for Non-Destructive Testing (4)
Provides students with the essential mathematical skills tailored specifically for the field of Nondestructive Testing (NDT). Focusing on practical application, the course emphasizes the mathematics required to interpret and analyze data from a variety of NDT measurement devices. Students will learn to read and understand outputs from instruments used to detect surface and subsurface flaws in materials, applying mathematical concepts to support accurate diagnostics and decision-making. Through hands-on exercises, students will build confidence in using mathematics to enhance their NDT skills and ensure precise, reliable results in real-world testing scenarios. This course is a key component of the NDT program, equipping students with the mathematical skills to be successful in industry.

NDT 240 - Radiographic Testing Level II (5)
This course follows the Society of Nondestructive Testing Recommended Practice, SNT-TC-1A most current edition for personal qualification and certification in Nondestructive Testing and meets or exceeds the minimum requirements. It reviews radiographic principles, film quality and manufacturing processes highlighting associations with discontinuities. Students will perform a variety of hands-on exercises with multiple examples of evaluation and interpretation of results that relate directly to industry practices.

Prerequisite: Prerequisite: NDT 130 Radiation Safety Training and NDT 140 Radiographic Testing Level I with a C or better.

NDT 250 - Ultrasonic Testing Level II (5)
This course follows the Society of Nondestructive Testing Recommended Practice, SNT-TC-1A most current edition for personal qualification and certification in Nondestructive Testing and meets or exceeds the

minimum requirements. It reviews basic principles and equipment with A,B,C scans and computerized systems with calibration in straight, angle beam. Students will perform a variety of hands-on exercises on a variety of materials and evaluate discontinuities for size and location that relate directly to industry practices.

Prerequisite: Prerequisite: NDT 150 Ultrasonic Testing Level I with a grade of C or better.

NDT 255 - Ultrasonic Testing Immersion (4)
Covers ultrasonic (UT) immersion principles including; focusing, water path, beam profile measurement, near field measurement, creation of time corrected gain (TCG curves), acoustic compatibility measurements and defect sizing techniques. Also includes immersion probe design considerations and technology in accordance with ASNT CP-105.

Prerequisite: NDT 150 with a grade of C or better.

NDT 260 - Intro to Phase Array Ultrasonic Testing (PAUT) (5)
This is an introductory course in phase array testing that familiarizes the student with advanced scanning methods, advanced equipment and precision testing of fabrications, castings, repairs etc. It prepares the student for certification in future coursework.

Prerequisite: Prerequisite: NDT 150 Ultrasonic Testing Level I with a grade of C or better.

NDT 271 - Digital and Computed Radiography (5)
Follows the American Society for Nondestructive Testing Recommended Practice's SNT-TC-1A most current edition for personnel qualification and certification in computed and digital radiographic testing. Reviews the history of radioactive materials, properties of matter and radioactive materials, types of radiation exposure devices, radiation sources, and safety principles. Introduces the advantages and disadvantages of computed and digital radiographic equipment and techniques. Includes a variety of hands-on exercises that relate directly to industry practices.

Prerequisite: Prerequisite: NDT 130 Radiation Safety Training with a grade of C or better.

NDT 272 - Advanced Radiography (5)
Provides an opportunity to learn the specifications guiding Level-II radiograph interpretation. Includes working with traditional film radiography, computed radiography (CR), and digital radiography (DR) to create and inspect radiographs for acceptance criteria based upon industry standards such as the American Welding Society (AWS) D1.1 structural code book and American Society of Testing Materials (ASTM) specifications.

Prerequisite: Prerequisite: NDT 130 Radiation Safety Training with a grade of C or better.

NDT 278 - Nondestructive Testing Review (4)
Provides a review of each of the five methods taught in the NDT program. Includes ultrasonic testing (UT), penetrant testing (PT), magnetic particle testing (MT), radiographic testing (RT), and visual testing (VT).

Prerequisite: NDT 240 Radiographic Testing Level II. Corequisite: n/a.

NDT 280 - CWE Nondestructive Testing & Evaluation (1-12)
Gives students practical experience in supervised employment related to NonDestructive Testing and Evaluation. Provides an opportunity to identify job performance objectives and work a specified number of hours during the term. Note: Credits earned are based on identified objectives and number of hours worked. May be repeated for a maximum of 24 credits.

Corequisite: N/A.

NFM - Nutrition and Foods Management

NFM 225 - Nutrition (4)

Introduces nutrients: their functions, sources, effects of deficiency, and toxicity. Examines current recommendations for Americans and topics of current interest. Includes digestion, metabolism and changing nutrient needs through the life cycle. Provides opportunity to evaluate personal dietary intake for three days. College-level reading and writing and are also strongly recommended for success in this course.

Prerequisite: Prerequisite: One of the following: BI 112 Cell Biology for Health Occupations or BI 102 General Biology or CH 112 Chemistry for Occupations or CH 150 Preparatory Chemistry or CH 121 College Chemistry or CH 221 General Chemistry. All Prerequisite must be completed with a grade of C or better.

NMC - New Media Communication

NMC 100 - New Media and Culture (4)
Provides students with the basic critical skills to analyze the cultural, social, and political impact of new media technologies, new media texts, and new media institutions. Students will be exposed to a variety of social scientific and humanistic conceptual approaches to analyzing new media and culture. Special emphasis will be placed on historical analyses of how new media have shaped culture, as well as how culture has shaped new media.

NUR - Nursing

NUR 101A - Fundamentals of Nursing (5)
The first nursing course in the lecture series. Explores the basic roles and responsibilities of a professional nurse. Introduces the basic physiological and psychosocial needs of all human beings. Prepares students to begin utilizing the nursing process and evidence in thinking and decision making surrounding care. Required: Admission to the Nursing program.

Prerequisite: BI 233, BI 234, NUTR 225 and MTH 095 all with a grade of C or better. Corequisite: NUR 101B.

NUR 101B - Fundamentals of Nursing Practice (4)
The first course in the lab series. Applies theory from the didactic portion of the curriculum to the nursing practice experiences in skills laboratory, direct client care, and simulation. Focuses on the development of nursing roles and responsibilities; providing for basic care needs, communicating, documenting, performing physical assessments, and the development of a nursing care plan.

Prerequisite: BI 233, BI 234, NUTR 225 and MTH 095 all with a grade of C or better. Corequisite: NUR 101A.

NUR 102A - Introductory Medical-Surgical Care (5)
The second nursing course in the lecture series. Explores further roles and responsibilities of the nurse in the perioperative and medical-surgical settings. Prepares students to engage in the planning of nursing care for those clients with common pathophysiological and psychosocial problems found within medical-surgical nursing. Required: Admission to Nursing program.

Prerequisite: NUR 101A with a C or better and successful completion of NUR 101B. Corequisite: NUR 102B.

NUR 102B - Introductory Medical-Surgical Practice (4)
The second course in the lab series. Applies theory from the didactic portion of the curriculum to the nursing practice experiences in skills laboratory, direct client care, and simulation. Expands on the safe application of principles from the previous term and begins to integrate concepts of perioperative and medical-surgical nursing. Students begin to actively manage and direct nursing care safely and effectively while integrating new skills. Required: Admission to Nursing program.

Prerequisite: NUR 101A with a grade of C or better and successful completion of NUR 101B. Corequisite: NUR 102A.

NUR 103A - Care Throughout the Lifespan (5)
The third nursing course in the lecture series. Explores the nursing care of individuals and families across the lifespan with a strong focus on health promotion. Explores a wide variety of pathophysiological and psychosocial health problems with a focus on developmental stages. Required: Admission to Nursing program.

Prerequisite: NUR 102A with a grade of C or better and successful completion of NUR 102B. Corequisite: NUR 103B.

NUR 103B - Nursing Practice Throughout the Lifespan (4)
The third course in the lab series. Applies theory from the didactic portion of the curriculum to the nursing practice experiences in skills lab, simulation and direct client care in a variety of settings. Builds on continued safe application of skills and principles from the previous terms while integrating lifespan issues. Skills of managing client care, prioritizing time, and integrating clinical judgment are applied in nursing practice experiences. Required: Admission to Nursing program.

Prerequisite: NUR 102A with a grade of C or better and successful completion of NUR 102B. Corequisite: NUR 103A.

NUR 201A - Advanced Medical-Surgical Care (5)
The fourth nursing course in the lecture series. Explores advanced medical-surgical care and concepts. Focuses on the pathophysiology and nursing care of acute and chronic disease processes. Required: Admission to Nursing program.

Prerequisite: NUR 103A with a grade of C or better and successful completion of NUR 103B. Corequisite: NUR 201B.

NUR 201B - Advanced Medical-Surgical Practice (4)
The fourth course in the lab series. Applies theory from the didactic portion of the curriculum to nursing practice experiences in simulation and direct client care in a variety of settings. Continues to build on safe application of skills and principles from previous terms while assuming care of clients with more advanced medical-

surgical problems. Focuses on collaboration and coordination of care while beginning to evaluate and modify nursing care plans. Required: Admission to Nursing program.

Prerequisite: Prerequisite: NUR 103A Care Throughout the Lifespan with a grade of C or better and successful completion of NUR 103B Nursing Practice Throughout the Lifespan. Corequisite: Corequisite: NUR 201A Advanced Medical-Surgical Care.

NUR 202A - Critical Transitions In Care (5)
The fifth nursing course in the lecture series. Focuses on critical transitions in care and complex pathophysiological problems. Emphasizes critical thinking, communication and advocacy for the high-acuity client. Required: Admission to Nursing program.

Prerequisite: NUR 201A with a grade of C or better and successful completion of NUR 201B. Corequisite: NUR 202B.

NUR 202B - Nursing Practice During Critical Transitions (4)
The fifth course in the lab series. Applies theory from the didactic portion of the curriculum to nursing practice experiences in simulation and direct client care in a variety of settings. Consistent safe application of skills and principles from previous terms is expected. Emphasizes clinical judgment, communication, collaboration and supervision with direct client care. Nursing care planned, implemented and evaluated is to be client-centered, evidence-based and reflect quality, safety, legal and ethical standards of nursing. Required: Admission to Nursing program.

Prerequisite: NUR 201A with a grade of C or better and successful completion of NUR 201B. Corequisite: NUR 202A.

NUR 203A - Preparation for Professional Practice (1)
The final nursing course in the lecture series. Focuses on development activities and preparation for NCLEX-RN testing. Addresses a comprehensive review of all nursing coursework with identification of individual student weaknesses and areas for improvement. Provides numerous opportunities for testing practice and to reflect on clinical practice and achievement of the End of Program Student Learning Outcomes. Required: Admission to Nursing program.

Prerequisite: NUR 202A with a grade of C or better and successful completion of NUR 202B. Corequisite: NUR 203B.

NUR 203B - Introduction to Professional Practice (6)
The final course in the lab series. Facilitates transition into professional practice through nursing practice experience that is supervised by a registered nurse Clinical Preceptor. Allows students to provide direct care to individuals and families under the direct supervision of the Clinical Preceptor with guidance from program faculty. Focuses on the role of the professional nurse while increasing their responsibilities and accountability in practice as a member of the multidisciplinary team. Placement options include acute, sub-acute, and community settings primarily in the Linn-Benton service district. Required: Admission to Nursing program.

Prerequisite: NUR 202A with a grade of C or better and successful completion of NUR 202B. Corequisite: NUR 203A.

NUR 222 - Professional Practice Issues (2)
Introduces and discusses ethical, legal and professional responsibilities in relation to employment, licensure, professional organizations and changing trends in health care.

Prerequisite: Prerequisite: Successful in NUR 202A & NUR 202B. Corequisite: Corequisites: NUR 203A & NUR 203B.

NUR 268A - Drug Therapy & Nursing Implications (1)
The first course in the lecture series. Focuses on nursing management and critical thinking regarding medication therapy. Introduces safety, pharmacodynamics, pharmacokinetics, specific drug therapies, drug interactions and nursing implications. Applies topics to the drug groups applicable to the content provided in NUR 101A. Uses drug lists for each major category of drugs to direct learning for drug action, safe dosage, side effects, drug interactions, adverse reactions, nursing implications, and client teaching. Required: Admission to Nursing program.

Corequisite: NUR 101A and NUR 101B.

NUR 268B - Drug Therapy & Nursing Implications (1)
The second course in the lecture series. Builds on the knowledge acquired in NUR 268A and continues to focus on nursing management, critical thinking, and safety with regard to medication therapy. Elaborates on the topics of: pharmacokinetics, pharmacodynamics, specific drug therapies, and interactions of the drug groups which are applicable to the content provided in NUR 102A. Uses drug lists for each major category of drugs to direct learning for drug action, safe dosage, side effects, drug interactions, adverse reactions, nursing implications and client teaching. Required: Admission to Nursing program.

Prerequisite: NUR 268A with a grade of C or better.

NUR 268C - Drug Therapy & Nursing Implications (1)
The third course in the lecture series. Builds on the knowledge acquired in NUR 268A and NUR 268B and continues to focus on nursing management, critical thinking, and safety with regard to medication therapy. Explores the topics of pharmacokinetics, pharmacodynamics, specific drug therapies, and interactions of the drug groups which are applicable to the content provided in NUR 103A. Uses drug lists for each major category of drugs to direct learning for drug action, safe dosage, side effects, drug interactions, adverse reactions, nursing implications, and client teaching. Required: Admission to Nursing program.

Prerequisite: NUR 268B with a grade of C or better.

NUR 268D - Drug Therapy & Nursing Implications (1)
The fourth course in the lecture series. Builds on the knowledge acquired in NUR 268C and continues to focus on nursing management, critical thinking, and safety with regard to medication therapy. Further expands on the topics of pharmacokinetics, pharmacodynamics, specific drug therapies, and interactions of the drug groups which are applicable to the content provided in NUR 201A. Uses drug lists for each major category of drugs to direct learning for drug action, safe dosage, side effects, drug interactions, adverse reactions, nursing implications and client teaching. Required: Admission to Nursing program.

Prerequisite: NUR 268C with a grade of C or better.

NUR 280 - CWE NURSING (1 TO 12)

CWE is designed to provide the eligible nursing student with additional clinical learning experience. The student nurse is paired with a registered nurse who serves in the role of a Clinical Teaching Associate (CTA). CWE may occur in a variety of clinical settings. In any setting, the clinical experience builds on nursing knowledge and skills previously attained and practiced in the students' course of study. All LBCC nursing policies and procedure will remain in effect for the student, just as they would in the core clinical experience. The major difference is that any task, skill or activity that the student would be required to perform in the presence of the core clinical faculty, the student may perform in the presence of the CTA. This course is designed to be individually tailored to the students' interests and individually identified outcomes. Students will identify course outcomes in collaboration with the CWE faculty. May be repeated for a maximum of 24 credits.

Prerequisite: Prerequisite: NUR 103 Care Throughout the Lifespan with a grade of C or better.

NUTR - Nutrition

NUTR 225 - General Human Nutrition (3)
General Human Nutrition addresses the relationship of food, its nutrients and other components to the promotion of health and fitness throughout life. Examines current nutrient recommendations and changing nutrient needs throughout the life cycle.

OTA - Occupational Therapy Assistant

OTA 115 - OTA Anatomy & Physiology I (4)

The first in a 2-course series that covers the basic structures and functions of the human body. This course addresses the following body systems: skeletal, muscular, integumentary and nervous. It includes an overview of kinesiology. Required: Admission into the OTA program.

OTA 116 - OTA Anatomy & Physiology II (4)

The second in a 2-course series that covers the basic structures and functions of the human body. This course addresses the following body systems: cardiovascular, lymphatic, respiratory, digestive, urinary, endocrine, and reproductive. Required: Admission into the OTA program.

OTA 117 - Professionalism (1)
Provides an opportunity to explore the concept of professionalism, and to develop foundational skills, behaviors, and attitudes for a successful career as an Occupational Therapy Assistant. Covers resume writing, job searching, and job interviewing.

OTA 118 - Documentation (2)
Provides an introduction to documentation for the occupational therapy assistant. Examines purposes of documentation, guidelines for documentation, and a variety of documentation types and styles. Covers the knowledge and skills necessary for reading and writing subjective, objective, assessment, and plan (SOAP) notes and narrative notes. Incorporate knowledge from technical writing and medical terminology courses.

OTA 120 - Occupational Therapy Foundations (4)

Provides an introduction to and foundation for the study of occupational therapy. Includes an overview of the history and philosophy of the profession, the basic theories that underlie its practice, and the role of occupation in the achievement of health and wellness. Explores the profession's practice framework, scope of practice, and standards of practice, as well as ethical and legal issues that pertain to the field. Emphasizes the roles and responsibilities of the occupational therapy assistant as practitioner, advocator, educator, and research assistant, as well as the professional relationship between the occupational therapy assistant and the occupational therapist. Explores the concepts of environmental protection, human safety and patient rights. Required: Admission into the OTA program.

OTA 122 - Mental Health Theory & Practice (4)

This course explores mental health conditions and the occupational performance challenges commonly associated with these conditions. Students learn theory and practice skills for performing assessments and providing interventions (preparatory, purposeful, and occupation-based) for occupational therapy clients with mental health challenges. Safety, documentation, and mental health promotion are addressed.

OTA 124 - Physical Health Theory & Practice (4)

Explores physical health conditions and the occupational performance challenges commonly associated with these conditions. Students learn theory and practice skills for performing assessments and providing interventions (preparatory, purposeful, and occupation-based) for occupational therapy clients with physical health challenges. Safety, documentation, and physical health promotion are addressed. Required: Admission into the OTA program.

Corequisite: Corequisite: OTA 128 Physical Health Lab.

OTA 125 - Therapeutic Use of Self (1)

This course provides the opportunity to develop basic skills related to establishing and maintaining therapeutic relationships with clients. Cultural diversity issues and their effect on the therapeutic use of self are examined.

OTA 128 - Clinical Skills & Therapeutic Methods I (2)

Develops clinical skills for performing assessments and providing interventions (preparatory, purposeful, and occupation-based) for occupational therapy clients with physical health challenges. Emphasizes safety.

Corequisite: OTA 124 Physical Health Theory & Practice.

OTA 140 - Activity Analysis (4)
Provides an introduction to activity analysis. Examines the impact of the interaction between activity demand, client factors, and contexts on occupational performance. Students will develop basic skills for analyzing, grading, and adapting purposeful activites to enhance occupational performance. Students will demonstrate a variety of purposeful activities used in occupational therapy practice including use of technologies that support the delivery of occupational therapy services. Required: Admission into the OTA program.

OTA 160 - Level I Fieldwork (1)

Provides an opportunity to observe occupational therapy in one or more settings, and to participate in select aspects of the occupational therapy process. Begins to integrate theory learned in the classroom with practice observed in the workplace. Emphasizes observation, communication, and professional attitudes and behaviors. Required: Admission into the OTA program.

Prerequisite: Corequisite: OTA 161 Fieldwork Seminar.

OTA 161 - Fieldwork Seminar (1)
This course allows for individual reflection and group discussion of occupational therapy practice issues while students are gaining experience in Level I Fieldwork. Emphasis is placed on tying theory to practice. Additionally, students undergo further orientation to and preparation for Level II Fieldwork.

OTA 222 - Pediatric Theory & Practice (4)
Explores normal development, common diagnoses, and occupational context associated with infancy, childhood, and adolescence. Students learn theory and practice skills for performing assessments and providing treatment for pediatric clients. Emphasis is placed on safety, activity analysis, therapeutic use of self, and documentation. Required: Admission into the OTA program.

Prerequisite: Prerequisite: PSY 215 Intro Developmental Psychology with a grade of "C" or better.

OTA 224 - Geriatric Theory & Practice (3)
Explores normal development, common diagnoses, and occupational contexts associated with aging. Students learn theory and practice skills for performing assessments and providing treatment for geriatric clients. Emphasis is place on safety, activity analysis, therapeutic

use of self, and documentation. Required: Admission into the OTA program.

Prerequisite: Prerequisite: PSY 215 Intro Developmental Psychology with a grade of "C" or better. Corequisite: Corequisite: OTA 228 Clinical Skills & Therapeutic Methods II.

OTA 228 - Clinical Skills & Therapeutic Methods II (1)
Develops and refines clinical skills for performing assessments and providing interventions (preparatory, purposeful, and occupation-based to occupational therapy clients with specific geriatric conditions). Emphasizes safety.

Prerequisite: Prerequisite: OTA 128 with a grade of C or better. Corequisite: OTA 224.

OTA 230 - Innovative Theory & Practice (2)

Offers students the opportunity to explore emerging and potential areas of practice in occupational therapy. Students develop basic skills for assisting with research in occupational therapy. Required: Admission into the OTA program.

OTA 240 - OTA Administration & Management (2)
Provides students the opportunity to learn health administrative concepts and to practice clinical management skills. Topics include governmental regulation, organizational improvement, workload management, reimbursement methods, and inventory systems. Preparing for work in an academic setting, resume writing, job searching and job interviewing are also covered. Required: Admission into the OTA Program.

OTA 260 - Level II Fieldwork A (10)

Provides students the opportunity to further develop the knowledge, skills, behaviors, and attitudes needed to function as competent, entry-level, generalist occupational therapy assistants. Students will carry out professional responsibilities of the occupational therapy assistant under supervision, including delivery of occupational therapy services to a variety of clients. Together, Level II Fieldwork A and Level II Fieldwork B form the capstone experience for the Occupational Therapy Assistant Associate of Applied Science Degree Program. Required: Admission into the OTA program.

OTA 270 - Level II Fieldwork B (10)

Provides students the opportunity to further develop the knowledge, skills, behaviors, and attitudes needed to function as competent, entry-level, generalist occupational therapy assistants. Students will carry out professional responsibilities of the occupational therapy assistant under supervision, including delivery of occupational therapy services to a variety of clients. Together, Level II Fieldwork A and Level II Fieldwork B form the capstone experience for the Occupational Therapy Assistant Associate of Applied Science Degree Program. Required: Admission into the OTA program.

PBT - Phlebotomy

PBT 100 - Phlebotomy (6)

Students will learn basic phlebotomy practices. This course provides information on the performance of a variety of blood collection methods using proper techniques and standard precautions. Students will receive instruction on how to prepare the blood collection site, how to choose the proper collection tools and how to handle the transportation, processing and management of collected samples. Required: Admission to the Phlebotomy program.

PBT 101 - Phlebotomy Law & Ethics (2)

Covers the rules and regulations that govern laboratories in the State of Oregon. Examines the ethical, professional and confidentiality standards set by medical and clinical laboratory professions. Required: Admission to the Phlebotomy program.

PBT 102 - Phlebotomy Medical Terminology (1)

Students will learn basic medical language in written and oral forms to communicate as members of a health care professional team. The course is designed to provide students the foundation to understand the basics of physician's diagnosis and treatment that influence blood draws. Required: Admission to the Phlebotomy program.

PBT 103 - Communication and Documentation in Phlebotomy (1)
Teaches proper documentation procedures. Introduces the electronic healthcare record. Emphasizes proper communication between hospital departments to ensure patient safety and adherence to hospital protocols.

PBT 104 - Advanced Phlebotomy Skills (1)
Prepares students for proper use of Electrocardiogram (EKG) machinery, the drawing of special populations, and how to handle unexpected events within the lab. Examines on the basics of ECG testing, heart pressures,

blood volume/physiology and the electrical conduction system.

PBT 111 - Lab Operations in Phlebotomy (5)
Covers the health care delivery system and the types of laboratory procedures. Provides instruction for the processes involved with requisitioning, specimen transport, and specimen processing. Presents information on specimen collection and specimen integrity in the delivery of patient care. Addresses quality assurance and quality control standards. Required: Admission to the Phlebotomy program.

PBT 112 - Job Success & Professionalism for Phlebotomy (1)

Focuses on the basic concepts of communication, personal and patient interaction, and professional behavior. Teaches employability skills such as job search techniques and resume writing, professional grooming, and interview techniques. Required: Admission to the Phlebotomy program.

PBT 120 - Anatomy & Physiology For Phlebotomy (3)

Provides an overview of basic anatomy and physiology of body systems as well as anatomic terminology as it relates to the profession of Phlebotomy. Relates anatomy and general pathological conditions associated with the body systems, especially those related to the circulatory and urinary system to clinical laboratory procedures. Required: Admission to the Phlebotomy program.

PBT 190 - Phlebotomy Practicum (5)
Allows students to gain practical experience while participating in a supervised learning experience in a health care field. Requires completing competencies and working a specified number of hours during the term in preparation to sit for the national ASCP (American Society for Clinical Pathology) examination upon graduation.

PE - Physical Education

PE 131 - Intro To Health And Physical Education (3)

Surveys professional opportunities in the area of health and physical education. Provides a basic philosophy of physical education and health as well as objectives. Qualifications of a variety of related occupations are discussed. Required for all physical education and health majors.

PE 158 - Care/Prevent Athletic Injuries (3)
An introduction to the theoretical and practical aspects of preventing, treating and rehabilitating athletic injuries.

PE 180B - Adv Basketball: Women (1)
Provides a detailed presentation of individual basketball skills and on-court strategy for team play. May be repeated for a maximum of 6 credits.

Prerequisite: Recommended: Previous basketball experience and a higher level of athleticism are recommended as it can be a safety hazard to have a beginner playing with experienced players.

PE 180C - Basketball Skills: Women (1)
Continued emphasis on conditioning for overall efficiency of basketball skills. Provides a detailed presentation of basketball skills and a plan for overall improvement. May be repeated for a maximum of 6 credits.

Prerequisite: Recommended: Previous basketball experience and a higher level of athleticism are recommended as it can be a safety hazard to have a beginner playing with experienced players.

PE 180D - Basketball Conditioning: Women (1)
Emphasis on development of strength and conditioning needed to play competitive basketball. May be repeated for a maximum of 6 credits.

Prerequisite: Recommended: Previous basketball experience and a higher level of athleticism are recommended as it can be a safety hazard to have a beginner playing with experienced players.

PE 180G - Adv Volleyball: Women (1)
Emphasizes the development of skills for team play. May be repeated for a maximum of 6 credits.

Prerequisite: Recommended: Previous volleyball experience and a higher level of athleticism are recommended as it can be a safety hazard to have a beginner playing with experienced players.

PE 180H - Volleyball Conditioning: Women (1)
Emphasis on development of strength conditioning, aerobic fitness, agility and pylometric drills needed in improving volleyball skills. May be repeated for a maximum of 6 credits.

PE 1851 - Volleyball (1)
Beginning Volleyball - Introduces the skills and techniques basic to volleyball, including different offensive and

defensive forms of team play, strategies, etiquette and rules of the game. **Intermediate Volleyball** - Emphasizes increasing a player's abilities within a team situation. Designed for the player who has mastered beginning volleyball skills. **Advanced Volleyball** - Increases skill levels and mental strategies, with emphasis on increasing a player's abilities within a team situation. May be repeated for a maximum of 6 credits.

PE 1852 - Walk for Health (1)
Emphasizes the health and fitness benefits of a regular walking program, including strengthening and stretching activities. Instruction focuses on fitness walking and mechanics, physiological and psychological effects of walking, injury prevention, equipment and long-term exercise commitment. May be repeated for a maximum of 6 credits.

PE 1854 - Weight Training (1)
Provides instruction and practices in conditioning programs specific to sports participation. May be repeated for a maximum of 6 credits.

PE 1855 - Relaxation and Massage (1)
Provides the knowledge and skills needed to incorporate and practice a variety of techniques of relaxation and massage. Massage and relaxation are two basic and effective ways of attaining and maintaining good health and reducing stress. May be repeated for a maximum of 6 credits.

PE 1857 - Intermediate Basketball (1)
Emphasizes basketball conditioning, skill development and game situations. Features game format. May be repeated for a maximum of 6 credits.

PE 185A - Circuit Weight Training (1)
Provides instruction and participation in circuit training routines designed to improve muscular strength, muscular endurance, flexibility and body composition. May be repeated for a maximum of 6 credits.

PE 185F - Bowling (1)
Students will increase proficiency in bowling skills and techniques. Rules and courtesies of the game as well as social and recreational values to the student are stressed. May be repeated for a maximum of 6 credits.

PE 185G - Body Conditioning (1)
Provides instruction and practice in exercises that condition the body. Techniques taught for the use of free and fixed weights, and aerobic equipment. Flexibility, strength and physical endurance emphasized. May be repeated for a maximum of 6 credits.

PE 185GS - Soccer (1)
Basic skills, rules, and strategies for soccer. Includes dribbling, kicking, trapping, heading, throw-in, tackling, shooting, goalie play, corner kicks, penalty kicks, soccer formations, and offensive and defensive play. May be repeated for a maximum of 6 credits.

PE 185J - Zumba Fitness (1)
Zumba Fitness promotes improved cardio respiratory conditioning, muscle endurance, flexibility, and/or body composition through structured group exercises featuring rhythmic dance and interval training sessions. May be repeated for a maximum of 6 credits.

PE 185L - Yoga (1)
A beginning or intermediate level class where students learn basic yoga poses and are given options so that they can work at their own level. Breathing, stretching and relaxation are focused on in class. Benefits include greater flexibility and strength and reduced stress. Classes end with five minutes of deep relaxation. May be repeated for a maximum of 6 credits.

PE 185LS - Yoga Strength (1)
This class combines the benefits of yoga with strength training. Sets of repetitions with weights are performed throughout the class to tone and strengthen all major muscle groups of the body. This challenging class improves flexibility and leaves participants enjoying the

positive, calming effects of yoga and the strengthening, toning benefits of weight training. May be repeated for a maximum of 6 credits.

PE 185M - Golf (1)
Beginning Golf - Introduces the mental and physical needs involved in golf, including grip, stance, swing techniques, rules, strategy and etiquette. Note: Eight-week class. **Intermediate Golf** - Provides a more detailed presentation of golf techniques and strategy to improve and correct basic swing errors. Note: Eight-week class. **Advanced Golf** - Provides a detailed presentation of golf technique and strategy to improve and correct basic swing errors. Also includes on-course play. Note: Eight-week class. May be repeated for a maximum of 6 credits.

Prerequisite: Prerequisite: PE 185M Beginning or Intermediate Golf.

PE 185P - Jogging (1)
Emphasizes the health and fitness benefits of a regular jogging program, including strengthening and stretching activities. Instruction focuses on mechanics of jogging, physiological and psychological effects of jogging, injury prevention, equipment and long-term exercise commitment. May be repeated for a maximum of 6 credits.

PE 185PC - Pickleball (1)
Introduces the skills and techniques basic to pickleball, including different offensive and defensive forms of team play, strategies, etiquette, and rules of the game. May be repeated for a maximum of 6 credits.

PE 185Q - Martial Arts (1)
Beginning Martial Arts - Introduces the student to Martial Arts. Systems of Kenpo Karate, Eskrima and Self-Defense are explored. Includes basics such as blocking, striking, and kicking. Self Defense movements, katas (forms), and bag work application will also be covered. Emphasizes proper warm-up, calisthenics, and stretching to establish and maintain good body condition. **Intermediate Martial Arts** - Focuses training on expanding knowledge and physical skills in the Kenpo Karate System and includes continued development of basics, higher level katas (forms), and the enhancement and development of self-defense techniques. Emphasizes proper warm-up, calisthenics, and stretching to establish and maintain good body condition. **Freestyle Martial Arts** - A course designed to deal with freestyle techniques of martial arts including several different styles and philosophies. May be repeated for a maximum of 6 credits.

PE 185R - Hip Hop Dance (1)
An introductory class that utilizes elements of Hip-Hop, jazz dance and other contemporary dance forms. It is a fun, high-energy class. Students should be in good physical condition without chronic injuries. May be repeated for a maximum of 6 credits.

PE 185U - Sand Volleyball (1)
Introduces skills and techniques to basic and intermediate sand volleyball, including different offensive and defensive formats of team play, strategies, and etiquette of the game. May be repeated for a maximum of 6 credits.

PE 185V - Ultimate Frisbee (1)
Introduces the skills and techniques basic to ultimate frisbee, including offensive and defensive play, strategies, etiquette and rules of the game. May be repeated for a maximum of 6 credits.

PE 185X - Cardio Drumming (1)
Designed to improve daily functioning, this class uses weighted drumsticks to integrate a rhythmic full-body workout that combines cardio, conditioning, and strength training with pilates-inspired movements. Students improve stability, mobility, strength, and endurance. This class format is suitable for students of various fitness levels. May be repeated for a maximum of 6 credits.

PE 190A - Baseball Conditioning (1)
Emphasizes physical conditioning that develops strength and agility for better efficiency in baseball skills. Team concepts are taught through offensive and defensive strategies to improve team play. Three-week course. May be repeated for a maximum of 6 credits.

Prerequisite: Required: Instructor's approval.

PE 190D - Advanced Baseball (1)
Helps develop the advanced student in the game of baseball. Individual and team concepts are taught to ensure a high level of play from its participants. Recommended: Beginning baseball. May be repeated for a maximum of 6 credits.

Prerequisite: Required: Instructor's approval.

PE 190H - Advanced Basketball: Men (1)
Provides a detailed presentation of individual basketball skills and on-court strategy for team play. May be repeated for a maximum of 6 credits.

Prerequisite: Required: Instructor's approval.

PE 190J - Basketball Conditioning: Men (1)

Emphasis is on development of strength conditioning, aerobic fitness and agility drills needed in improving basketball skills. Three-week course. May be repeated for a maximum of 6 credits.

PE 194H - Foundations of Strength Training and Conditioning (4)
Exposes students to a variety of training methodologies, philosophies and applications. Places emphasis on preparing students with adequate beginning knowledge base in the area of resistance exercise and conditioning in order to write prescriptive training regimens for specific performance areas.

PE 212 - Sociocultural Dimensions Of Physical Activity (3)
Explores physical activity in contemporary society and its relationship to social processes such as athletic teams, coaches, media and fans. Examines the interrelationships that occur between physical activity and cultural institutions.

PE 231 - Lifetime Health & Fitness (3)

Evaluates selected areas of the student's present health and fitness level. Provides information on each of the wellness dimensions as they relate to physical fitness, back care, chronic disease, stress management, nutrition, weight management, behavioral change, and lifestyle choices. Considers work-life balance and self-responsibility. Shows the student how to enter the work site as a fit and healthy individual and suggests ways to maintain that level of health.

PE 232 - Backpacking-Map & Compass (3)

Prepares the individual for safe, challenging and enjoyable wilderness trips. Emphasizes physical conditioning, equipment, clothing, food, safety and the use of map and compass.

Offered: Offered Spring only.

PE 270 - Sport Psychology (3)

Introduces mental, physical, social and psychological aspects of athletic performance and the significance of sport as it relates to culture, socialization, character development, personality, race, gender, economics, and mass media. Required: Ability to read and write at the college level. Critical thinking skills and problem solving strongly desired.

PE 280A - CWE PHYSICAL EDUCATION (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to physical education. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

PE 280B - CWE RECREATION (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to recreation. Students identify job performance objectives, work a specified number of hours during the term and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

PFW - Pipe Fitting & Welding

PFW 131 - Introduction to Pipe Processing & Preparation (3)
Emphasizes safety and equipment familiarization for cutting pipe and preparing pipe for welding. Includes the use of different methods for cutting and prepping pipe, as well as selecting size and material type.

PFW 132 - Intermediate Pipe Processing and Preparation (3)
Covers the fundamentals of oxy/fuel cutting on plate and pipe. Introduces the use of torch and equipment in a field setting, including the use of automated cutting tools.

Prerequisite: PFW 131 with a grade of C or better.

PFW 133 - Advanced Pipe Processing and Layout (4)
Continues intermediate pipe processing. Includes an in-depth approach to the fit up and cutting of saddles to fabricate pipe joints.

Prerequisite: PFW 132 Intermediate Pipe Processing and Preparation with a grade of C or higher. Corequisite: None.

PFW 156 - Interpretation of Pipe ISO Drawings (3)
Introduces the principles of interpretation and application of industrial pipe fabrication drawings as well as basic principles and techniques of pipe runs by planning and construction. Utilizes basic tools and equipment for layout fitting of welded fabrications. Covers the use and application of the American Welding Society (AWS) welding symbols. Emphasizes symbols used exclusively in pipe trades.

Prerequisite: WD4. 258 Basic Print Reading: Welders with a grade of C or higher. Corequisite: None.

PFW 166 - Pipe Welding Practices I (4)
The first course in a four-course series. Develops pipe welding skills with Shielded Metal Arc Welding (SMAW) and other welding processes. Covers cutting pipe and weld joint preparation, fitting, and welding pipe of various joint types per configurations and welding positions encountered in pipe welding trades. Emphasizes the importance of good fit-up. Includes technical information lectures in related subjects.

Prerequisite: Prerequisite: WD4. 245 Layout Procedures For Welders, WD4. 246 Advanced Arc Welding or WD4. 152 Welding II with a grade of C or better, or instructor permisson.

PFW 167 - Pipe Welding Practices II (4)
Second course in a four-course series. Provides additional practice time to further develop and refine pipe welding skills in the 2G, 5G, and 6G positions with shielded metal arc welding (SMAW), gas metal arc (GMAW), and flux core arc welding. Covers cutting pipe and weld joint preparation, fitting, and welding pipe of various joint types per configurations and welding positions encountered in the pipe welding trades. Emphasizes the importance of good fit-up. Includes technical lectures in related subjects.

Prerequisite: Prerequiste: PFW 166 Pipe Welding Practices I with a grade of C or better.

PFW 168 - Pipe Welding Practices III (4)
The third course in a four-course series. Builds on the knowledge and skills previously developed. Allows students additional practice time to further develop and refine pipe welding skills in the 2G, 5G, and 6G positions with shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), and other welding processes. Provides additional practice in cutting pipe and weld joint preparation, fitting, and welding pipe of various joint types per configurations and welding positions encountered in the Pipe Welding Trades. Emphasizes the importance of good fit-up. Includes technical lectures in related subjects.

Prerequisite: Prerequisite: PFW 167 Pipe Welding Practices II with a grade of C or better.

PFW 170 - Introduction to Pipe Fitting (1)
Introduces industrial pipe fitting. Covers the basic tools, parts, and materials used in pipe fitting.

Corequisite: None.

PFW 171 - Intermediate Pipe Fitting (1)
Covers fundamentals of pipe fitting and building pipe runs. Introduces basic procedures in planning, sketching, layout, and threading of pipe.

Prerequisite: PFW 170 with a grade of C or better.

PFW 172 - Advanced Pipe Fitting (3)
Expands upon the fundamentals of pipe fitting and building pipe runs. Introduces the basics of steam controls, traps and how condensate can influence piping. Covers pipe supports and other pipe system hardware.

Prerequisite: PFW 171 Intermediate Pipe Fitting with a grade of C or higher.

PFW 182 - Industrial Metal Trades Safety (3)
Introduces select areas of Industrial Safety Training so that terms and best practices are understood. The areas covered will include but not be limited to confined space, fall protection, lock-out tag-out, work site evaluation, hot-work permits, and overhead rigging and lifting basics.

PFW 220 - Pipe Fit-up & Field Welding I (5)
Provides hands-on skill development in pipe fit-up and welding in a field situation. Develops skills to take field measurements and translate them into a piping spool that needs to be fit and welded in the field. Emphasizes safe use of ladders and scaffolds in a real world setting.

PFW 221 - Pipe Fit-up & Field Welding II (5)
Provides a continuation of Pipe Fit-up and Field Welding I. Requires more difficult and quality fit-up welds.

Prerequisite: PFW 220 Pipe Fit-up & Field Welding I with a grade of C or higher.

PFW 235 - Pipe Trades Prep for Certification (5)
Provides guided instruction to improve welding techniques to help prepare for American Welding Society (AWS) Plate Welder Qualification Tests and/or American Society of Mechanical Engineers (ASME) Pipe Welder Qualification tests. Provides opportunities to practice with multiple processes and procedures to prepare for passing certification tests.

Prerequisite: Successful completion of Industrial Pipe Trades, One-Year Certificate or Instructor Approval.

PFW 242 - Alternative Joining Methods (2)
Focuses on alternative pipe joining methods often encountered in the pipe fitting trade. Provides basic information about why, when, and what tools are needed to apply joining methods.

PFW 255 - Welder Certification Plate & Pipe (5)
Provides opportunities to test against a wide variety of certification tests from plate to pipe, in a multitude of positions and processes. Conducts tests in the same manner as industry. Presents tips on how to approach a test with confidence.

PFW 263 - Pipe Trades Capstone (5)
Requires the fabrication of a predetermined, instructor-approved project that incorporates subject matter learned over the course of the Pipe Trades program. Includes an evaluation of completed capstone project to ensure industry standards for acceptability are met.

PFW 269 - Pipe Welding Practices IV (5)
The final course in a four-course series. Builds on the knowledge and skills developed in Pipe Welding Practices I and Pipe Welding Practices II. Allows time to further develop and refine pipe welding skills in 2G, 5G, and 6G positions using Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), and other welding processes. Provides an opportunity to practice with small bore pipe and introduces Gas Metal Arc Welding (GMAW) used on a positioner.

PFW 291 - Pipes Codes and Guidelines (2)
Covers American Welding Society Welding Codes, the American Petroleum Institute (API) 1104 code and also parts of American Society of Mechanical Engineers (ASME) section IX. Includes inspection and weld acceptability criteria, qualification and use of welding procedures, welding and fabrication practices, and use of prequalified weld joints.

PHL - Philosophy

PHL 201 - Intro To Philosophy (3)

Introduces students to the following: the nature of critical thinking and its role in everyday life; the history of critical thinking, especially in the Western World; the major themes that have dominated philosophy over the past three thousand years, and the trends these themes are taking in contemporary society. Recommended: College level reading and writing skills.

PHL 202 - Elementary Ethics (3)

Introduces students to the following: a brief history of ethical theory; a proposed explanation for the beginning of ethical theory during the Axial Age; the effect religion has had on ethical theories; the effect that science has had on ethical theories; the relationship of ethics to the reasoning process and the application of ethics to modern moral dilemmas. Recommended: College level reading and writing skills.

PHL 215 - History Of Western Philosophy (3)

Introduces students to the major philosophers and issues of the past 2,500 years and the historical conditions that have affected, and been affected by, the development of philosophy. An attempt is made to embrace a study of significant thinkers from all cultures throughout the ages. The major emphasis of the course, however, is on the philosophies of the Western World. Recommended: College level reading and writing skills.

PH - Physics

PH 104 - Descriptive Astronomy (4)
An introductory course covering the historical and cultural context of discoveries concerning planets and stars and their motion. Topics include models and the scientific method, astronomical tools, the solar system, start and stellar evolution, galaxies and cosmology. An

accompanying laboratory is used for experiments, including outdoor observations.

Prerequisite: Prerequisite: MTH 075 Variables and Linear Equations or equivalent with a grade of C or better.

PH 131 - Microcontrollers in Research & Design (1)
This course is a beginning course appropriate for students who have no prior science, microcontroller and/or programming experience. Students will use a microcontroller to collect data from various sensors measuring different aspects of the physical universe and use actuators such as motors and lights to manipulate the physical environment. May be repeated for a maximum of 2 credits.

PH 201 - General Physics (5)
The first course of a three-course series of introductory college physics for students who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Covers topics such as mechanics, force and motion in one- and two-dimensions, circular motion, gravitation, energy, and linear and angular momentum. Includes a laboratory component.

Prerequisite: MTH 112Z Precalculus II: Trigonometry with grade of C or better.

PH 202 - General Physics (5)
The second course of a three-course series of introductory college physics for students who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Explores the themes of thermodynamics, simple harmonic oscillators, and waves. Specifically includes fluids, temperature, heat, thermodynamics, wave motion, and sound. Includes a laboratory component.

Prerequisite: PH 201 with a grade of C or better.

PH 203 - General Physics (5)
The third course of a three-course series of introductory college physics for students who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Covers topics such as electric fields and potential, magnetism, electromagnetic induction, AC and DC circuits, atomic physics, and nuclear processes. Includes a laboratory component.

Prerequisite: PH 201 and PH 202 with a grade of C or better.

PH 211 - General Physics With Calculus (5)
The first course of a three-course calculus-based series of introductory college physics for students in science, engineering, and other curricula who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Includes topics such as measurement, scientific models, motion in a straight line, motion in two dimensions, vectors, and force and motion. Also covers Newton's laws of motion, energy, momentum, conservation laws, center of mass, and linear and angular momentum. Includes a laboratory component. Lab exercises clarify physical principles and teach measurement and analysis skills.

Prerequisite: MTH 251Z and MTH 252Z with a grade of C or better.

PH 212 - General Physics With Calculus (5)
The second course of a three-course calculus-based series of introductory college physics for students in science, engineering, and other curricula who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Covers topics such as universal gravitation, rotational mechanics and dynamics, static equilibrium, fluid mechanics, simple harmonic motion, waves, superposition of waves, sound, and geometric and wave optics. Includes a laboratory component. Lab exercises clarify physical principles and teach measurement and analysis skills. Recommended: MTH 254 Calculus (taken concurrently) for those students who will take PH 213.

Prerequisite: MTH 252 and PH 211 with a grade of C or better.

PH 213 - General Physics With Calculus (5)
The third course of a three-course calculus-based series of introductory college physics for students in science, engineering, and other curricula who plan to transfer credit to a four-year college or university, or for anyone desiring an understanding of physics principles. Covers topics such as electrostatic force, field and potential; current and resistance capacitance; magnetic field; forces on charged particles due to a magnetic field; Hall effect and other applications of electric and magnetic fields. Also covers Law of Biot and Savart, Ampere's law, magnetic dipoles, Faraday's law of induction, Lenz's law, induced electric fields, self and mutual induction, RC and RL direct current circuits, magnetic properties of matter, AC and DC circuits, displacement currents and Maxwell's equations, and electromagnetic waves. Includes a laboratory component.

Prerequisite: PH 212 and MTH 254 with a grade of C or better.

PH 265 - Scientific Computing (3)

Covers basic computational tools and techniques for courses in science and engineering. Project approach to problem solving using symbolic and compiled languages with visualization. Basic computer literacy assumed.

Prerequisite: Prerequisite: MTH 251 Differential Calculus with a grade of C or better or co-enrolled.

PH 280 - CWE PHYSICS (1 TO 12)

An instructional program designed to give students practical experience in supervised employment related to physics. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

PSG - Polysomnographic Technology

PSG 102 - Basic Polysomnography (3)

Introduces students to the field of Polysomnography and the role and scope of practice within the profession of sleep technology. Examines the history of sleep medicine and the basic physiology of sleep and sleep disorders.

PSG 103 - Patient Care & Communication (3)

Focuses on effective techniques for communicating with patients, family members, and other health care team members using verbal, written, and information technology tools/devices. Examines ethical issues associated with the sleep profession professionalism, and cultural competence. Emphasizes history taking, report preparation, delivery of patient teaching and education, and the documentation of events to industry standards. Required: Admission to the Polysomnography program.

PSG 104 - Anatomy & Physiology Related to Sleep (3)
Emphasizes anatomy and physiology of the human body pertinent to sleep. Covers the respiratory, nervous, and cardiovascular systems. The mechanics of breathing and gas exchange is emphasized.

PSG 110 - Job Success Skills for Polysomnography (1)

Focuses on the basic concepts of communication, personal and patient interaction, and professional behavior. Builds on employability skills such as job search techniques, resume writing, job applications, employment tests, cover letters, mock interviews, and professional dress and grooming.

PSG 204 - Diseases and Their Effect on Sleep (3)

Focuses on sleep disorders and how various diseases affect sleep. Examines diseases such as Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF) and their etiology. Required: Admission to the Polysomnography program.

PSG 205 - ECG Interpretation (2)

Explores the normal electrical conduction as well as common variations as evidenced by changes in the waveform on the cardiac rhythm. Examines the basics of Electrocardiogram (ECG) testing, heart pressures, blood volume/physiology and the electrical conduction system. Involves the interpretation of ECG rhythms: normal, ventricular hypertrophy, bundle branch block, AV block, myocardial ischemia, bradycardia, tachycardia, atrial fibrillation and irregular rhythms. Required: Admission to the Polysomnography program.

PSG 207 - Therapeutic Modalities (3)

Examines the basic principles of positive airway pressure (PAP) through the use of continuous positive airway pressure (CPAP) and bilevel positive airway pressure (BiPAP). Focuses on topics such as determination of need, equipment set-up, and oxygen/pressure titration. Emphasizes identification of respiratory events and patterns. Required: Admission to the Polysomnography program.

PSG 208 - RPSGT Exam Preparation (2)
Intended for individuals currently working as Polysomnography Technologists and students currently enrolled in the Polysomnography program. Breaks down the Polysomnographic Technologist (RPSGT) exam into units and examines each unit through lecture and practice exams. Identifies areas of test weaknesses through practice exams with individual instructor feedback provided. Required: Admission to the Polysomnography program.

PSG 211A - Sleep Technology Monitoring Equipment (3)
Teaches the basics of the technology used in the monitoring of sleep. Covers the principles of biopotential recordings, digital data acquisitions and signal processing. Includes equipment calibrations and troubleshooting, filter settings, use of amplifiers and the basics of pulse oximetry and capnography.

Corequisite: This course requires enrollment in PSG 211B Sleep Monitoring Equipment Lab. Offered: Summer Term.

PSG 211B - Sleep Monitoring Equipment Lab (2)
The lab component to PSG 211A. Covers proper and safe patient hook up procedures and monitoring as well as application of sleep monitoring equipment.

Corequisite: This course requires enrollment in PSG 211A Sleep Technology Monitoring Equipment.

PSG 215 - Scoring & Analysis I (3)

Introduces students to sleep staging rules. Provides knowledge and skills necessary to identify each sleep stage and then identify the rules associated with scoring the objective and subjective data of that sleep stage.

PSG 221A - Scoring and Analysis II (3)
Focuses on the scoring rules for respiratory events, cardiac events and limb movements as recommended by the American Academy of Sleep Medicine (AASM), Includes scoring rules for pediatric studies and home sleep monitoring tests as well.

Corequisite: This course requires enrollment in PSG 221B Scoring and Analysis II Lab.

PSG 221B - Scoring and Analysis II Lab (2)
The lab component to PSG 221A. Requires hands-on demonstration of knowledge of the American Academy of Sleep Medicine (AASM) scoring rules.

Corequisite: PSG 221A Scoring and Analysis II.

PSG 297A - Polysomnography Practicum I (10)
Provides clinical practicum experience for the application of learned concepts and theories. Provides the student with the opportunity to observe and apply theoretical principles while performing procedures under supervision of clinical staff. Required: Admission to the Polysomnography program.

PSG 297B - Polysomnography Practicum II (5)

This course allows students to gain clinical practice experiences for development, application, critical analysis, integration, synthesis and evaluation of concepts and theories in the performance of polysomnographic procedures. The planned clinical experience provides the student with the opportunity to observe and apply theoretical principles while performing procedures under supervision of the clinical staff. Students complete competencies and work a specified number of hours during the term in preparation to sit for the national examination. This is the second of two practicum opportunities. Required: Admission to the Polysomnography program.

PS - Political Science

PS 201 - Intro to American Politics/Government (3)

Introduces and analyzes the American political system. Studies the development and operation of the institutions of national government, the political process (elections, public opinion, interest group activities, policy-making), the American political culture, and the American political-economy (capitalism and American politics). Includes case studies of federalism, election rules, civil society, and lobbying. Recommended: College level reading and writing skills.

PS 204 - Intro To Comparative Politics (3)

Introduces major political, economic, and social concepts applied comparatively to a variety of governments and political systems including democracies, dictatorships, and theocracies. Focus is on Europe, former communist states, and Third World states of Africa, the Middle East, Asia, and Latin America. Uses case studies of political conflicts and social movements as well as role-playing and simulations. Recommended: College level reading and writing skills.

PS 205 - Intro International Relations (3)

Introduces analyses of current world events; the nature of the international political and economic systems; and alternative perspectives, strategies, and approaches to contemporary world problems. Topics include global diversity; poverty and economic development; environmental and resource issues; and war and peace. Recommended: College level reading and writing skills.

PS 211 - Peace And Conflict (3)

Examines the sources and causes of violence in relations involving individuals, groups, nations, and the global community. Focuses on alternatives to oppressive

behavior, undemocratic politics, and the violent resolution of conflict by exploring the ideas and strategies of nonviolence. Recommended: College level reading and writing skills.

PS 280 - CWE POLITICAL SCIENCE (1 TO 12)

Gives students practical experience in supervised employment related to political science. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

PSY - Psychology

PSY 101 - Psychology and Human Relations (3)
Psychology and human relations focuses on practical applications of psychology to relationships. Topics include models for understanding individual and social behavior, self and social perception, emotional self-regulation, physical and mental health, addictions, attraction, relationship formation and maintenance, leaders and followers, stress, work, leisure time, sexuality, commitment, and brief introduction to the clinical aspects of human behavior.

PSY 201Z - Introduction to Psychology I (4)
Introduction to the science and application of psychology. Emphasis will be placed on psychological concepts, theories, and principles related to: Research Methods, Behavioral Neuroscience, Consciousness, Sensation/Perception,Learning, Memory, Thinking and Intelligence, and related topics.

PSY 202Z - Introduction to Psychology II (4)
Introduction to the science and application of psychology. Emphasis will be placed on psychological concepts, theories, and principles related to: Personality, Social Psychology, Health and Well-Being, Motivation and Emotion, Disorders, Therapies, Lifespan Development, and related topics.

PSY 215 - Intro Developmental Psychology (3)

Explores physical, psychological, emotional, and social development from birth to death. Topics include: historical foundations; research methodology; and prominent theories/research of each developmental sequence across the lifespan. Recommended: College-level reading and writing skills. ALS 115 Advanced College Reading and Learning Strategies, PSY 201 General Psychology.

PSY 216 - Social Psychology (3)

Social psychology studies the social nature of human behaviors, attitudes, perceptions, thoughts and emotions. Major areas of study include: research methods, social perception and judgment, attitude formation and change, prejudice, discrimination, sexism, aggression, interpersonal attraction altruism, conformity, group dynamics, and the application of social psychology findings to current social issues. Recommended: College level reading and writing skills.

PSY 219 - Intro To Abnormal Psychology (3)

An introduction to the study of psychological disorders, including issues of diagnosis and treatment. Topics include: models of abnormality; overview of major disorders, including diagnostic considerations; current research on treatment effectiveness; and the impact of psychological disorders on society and its legal system. Recommended: College-level reading and writing skills.

PSY 220 - Thinking Like a Social Scientist (4)
Helps you develop critical thinking skills to evaluate evidence and understand psychological research. You'll learn how to analyze media coverage of psychological science and identify what's credible. Focuses on improving your ability to communicate clearly about research, including discussing methods, ethics, and the strengths and limitations of evidence. By the end, you'll be better equipped to assess and discuss psychological science in everyday life.

Prerequisite: Prerequisite: PSY 201Z Introduction to Psychology I and PSY 202Z Introduction to Psychology II with a grade of C or better.

PSY 225 - Quantitative Methods in Psychology and Social Science (4)
This introductory course in psychological and social science statistics prepares students for advanced study in research methods by developing students' competence in quantitative methods, statistical reasoning, and critical thinking. It focuses on using descriptive and inferential statistics to interpret data in experimental and descriptive research studies. Topics include descriptive statistics, hypothesis testing, correlation, one-way or two-way ANOVA, regression, controversies and emerging practices in open psychological science.

Prerequisite: Prerequisite: PSY 220 Thinking Like a Social Scientist with a grade of C or better.

PSY 280 - CWE PSYCHOLOGY (1 TO 12)

Gives students practical experience in supervised employment related to psychology. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

QS - Queer Studies

QS 262 - Introduction to Queer Studies (3)
Examines homophobia's and transphobia's relationship with racism, colonialism, sexism, ableism, classism and other forms of oppression. Introduces key concepts, histories, and political frameworks within Lesbian, Gay, Bisexual, Transgender, and Queer political movements in the United States. Explores activism and scholarship related to queer and transgender politics and identities.

R - Religion

R 102 - Religions of the Western World (3)
Investigates religions of the Western World. Includes discussion of how the outward forms of religious expression integrate with other cultural traditions. Focuses on Islam, Judaism, Christianity, Bahai, and Zoroastrianism.

R 103 - Religions of Eastern World (3)
Surveys cultures and religions of the eastern world with a focus on the teaching of compassion and tolerance in these religions. Includes understandings of Hinduism, Buddhism, Taoism, and Sikhism.

Prerequisite: Recommended: College level reading and writing skills.

R 202 - Intro to Religious Studies (3)
Explores the nature of religion as experienced historically throughout the world. Examines the nature of religious experience with the divine and the relationship between science and religion. Discusses the roles of language, myths, and symbols in religion.

Prerequisite: Recommended: College level reading and writing skills.

SOC - Sociology

SOC 204Z - Introduction To Sociology (4)
Introduces the central concepts, theories, and methods that define the sociological approach to investigating the social forces that shape our lives. Topics may include social structure, culture, socialization, race, class, gender, sexuality, and inequality.

SOC 205Z - Social Change and Institutions (4)
Sociological analysis of social institutions, such as family, education, health care, the economy, and the state. Includes an examination of connections among institutions and their impact on patterns of inequality and individual outcomes. Examines the forces and dynamics behind social change, such as social movements, culture, economic forces, technologies, and the environment.

SOC 206Z - Social Problems (4)
Applies the sociological perspective to the study of social problems, including their social construction, causes, and consequences. Explores the complexities surrounding their solutions, such as how solutions are socially constructed and policy proposals from sociologists and social movements. Topics may include poverty, discrimination, interpersonal violence, crime, addiction, ecological crises, war/global conflict, and health inequality.

SOC 222 - Sociology of the Family (3)

Examines intimate relationships, courtship, marriage and family patterns -- old, new and unconventional. Focuses on how relationships are built, maintained, changed and terminated. Recommended: College-level reading and writing skills.

SOC 280 - CWE SOCIOLOGY (1 TO 12)

Gives students practical experience in supervised employment related to sociology. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

SOC 281 - Introduction to Environment and Society (3)
Introduces the subdiscipline of environmental sociology that focuses on the relationship between society and the environment. Explores the basic concepts in sociology and applies them to a range of environment and natural

resource issues. Explores how various human populations experience and make sense of environmental issues. Examines social policies and actions to address environmental challenges.

SPN - Spanish

SPN 101 - First Year Spanish I (4)
Introduces basic structures of Spanish in order to help students communicate basic ideas. The class stresses all language skills (listening, speaking, reading and writing) through a communicative approach, as well as cultural topics. The class provides a background of Hispanic populations, especially those largely represented in the U.S. population. This is NOT a conversation class, but there is an emphasis on oral communication. Conducted mainly in Spanish. Students with previous knowledge of Spanish are encouraged to take the placement examination.

SPN 102 - First Year Spanish II (4)
Continues to build language proficiency and introduce new grammar structures, particularly those used to communicate about past events. This class augments students' ability to deal with different practical situations in Spanish, and it explores the history and cultures of more Spanish speaking countries. Further development of all language skills and culture. Conducted in Spanish. Required: SPN 101 (p. 207) First Year Spanish I with a grade of C or better, or take the placement examination, or obtain instructor's approval.

SPN 103 - First Year Spanish III (4)
Continues to build language proficiency and introduce new grammar structures. This class augments students' ability to successfully interact in more situations in Spanish, and explores the history and cultures of additional Spanish speaking countries. Further development of all language skills and culture. Conducted in Spanish. Required: Complete SPN 102 (p. 207) First Year Spanish II with a grade of C or better, or take the placement examination, or obtain instructor's approval.

SPN 104 - Spanish Agriculture/Horticulture I (4)
This course introduces basic structures of Spanish in order to help students communicate basic ideas in an agricultural or horticultural context. Although the class will focus mostly on oral communication, all language skills (listening, speaking, reading and writing) will be used in order to teach students through a communicative approach. The class provides a background of Hispanic populations, especially those largely represented in the U.S. population. This is NOT a conversation class, but there is an emphasis on oral communication. The class will be conducted mainly in Spanish. Students with previous knowledge of Spanish are encouraged to take the placement examination.

SPN 105 - Spanish Agriculture/Horticulture II (4)
This course will enable students to continue to build language proficiency and introduce new grammar structures, particularly those used to communicate about past events and commands. This class augments studentsäó» ability to deal with different practical situations that students will encounter in the agricultural/horticultural workplace in Spanish. It also explores the Spanish-speaking cultures with high populations both in the U.S. and in the agricultural/horticultural workplace.

Prerequisite: Required: SPN 104 Spanish Agriculture/Horticulture I with a grade of C or better, SPN 101 First Year Spanish I with a grade of C or better, or take the placement examination, or obtain instructor's approval.

SPN 201 - Second Year Spanish I (4)

Review and further development of all language skills toward proficiency and cultural understanding. SPN 201 prepares students to use Spanish in more academic settings. All four main skills of the language are emphasized (reading, writing, speaking, and listening). Acquaints students with Hispanic cultures through authentic materials. There is an emphasis in presenting different cultural manifestations. Conducted in Spanish. Required: SPN 103 First Year Spanish III with a grade of C or better, or four years of high school Spanish equivalent, or instructor's approval. Native speakers are required to have instructor approval.

SPN 202 - Second Year Spanish II (4)

Further development of all language skills toward language proficiency and cultural understanding. Conducted in Spanish. Acquaints students with more complex grammar structures, and with Hispanic cultures through authentic materials. Required: SPN 201 Second Year Spanish I with a grade of C or better, or five years of high school Spanish equivalent or instructor approval. Native speakers are required to have instructor approval.

SPN 203 - Second Year Spanish III (4)

Prepares students to use Spanish in more academic settings and use the language for critical and analytical purposes. Acquaints students with more complex

grammar structures, and with Hispanic cultures through authentic materials. Conducted in Spanish. Required: SPN 202 Second Year Spanish II with a grade of C or better, or instructor approval. Native speakers are required to have instructor approval.

SPN 214 - Spanish for Heritage Speakers I (4)
Part of a three-course sequence designed specifically for the needs of Spanish heritage speakers. The main goal is to improve their reading, writing, grammar and speaking skills, while deepending their understanding and appreciation of Hispanic cultures in the world and within the United States. All classroom interaction occurs in Spanish. Required: Spanish native speaker or heritage speaker (grew up speaking Spanish at home).

SPN 215 - Spanish for Heritage Speakers II (4)
This class is the second part of a three-course sequence specifically for the needs of Spanish heritage speakers. The main goal is to improve their reading, writing, grammar and speaking skills, while fostering critical thinking and deepening their understanding and appreciation of Hispanic cultures in the world and within the United States. All classroom interaction occurs in Spanish. Required: Spanish native speaker or heritage speaker (grew up speaking Spanish at home); completion of SPN 214 (p. 208) Spanish for Heritage Speakers I or instructor's approval.

SPN 216 - Spanish For Heritage Speakers III (4)
The third part of a three-course sequence, this course is designed specifically for the needs of Spanish heritage speakers. Improves reading, writing, grammar and speaking skills, while fostering critical thinking and deepening the understanding and appreciation of Hispanic cultures in the world and within the United States. All classroom interaction occurs in Spanish. Required: Spanish native speaker or heritage speaker (grew up speaking Spanish at home); completion of SPN 215 (p. 208) Spanish for Heritage Speakers II or instructor's approval.

SPN 280 - CWE Spanish (1 TO 14)

Gives students practical experience in supervised employment related to Spanish. Students identify job performance objectives, work a specified number of hours during the term, and attend a CWE-related seminar. Note: Credits are based on identified objectives and number of hours worked. Prerequisite: CWE coordinator approval. May be repeated for a maximum of 24 credits.

ST - Surgical Technology

ST 105 - Sterile Processing (5)
Focuses on understanding and implementing the necessary skills required for students who wish to function in entry-level positions in the Central Service and Sterile Processing departments of healthcare facilities. Involves hands-on learning combined with online didactic that is based on the Healthcare Sterile Processing Association (HSPA), formerly (IAHCSMM), curriculum. The course is designed to prepare students for success on the HSPA examination and become Certified Registered Central Service Technician (CRCST).

Central Service Technicians/Sterile Processors process, store, and distribute medical and surgical instruments, supplies, and equipment for operating rooms and other areas of hospitals and healthcare facilities. They understand and apply principles and methods of sterilization and infection control.

The course includes 44 hours of online didactic instruction and 22 hours of hands-on, in-person lab.

400 Hours

To obtain your HSPA certification as a CRCST, 400 hours of on-site training in Central Service is required which would be the responsibility of the student once completing the Linn Benton Community College class. We recommend that you look into where you might be able to earn these hours before enrolling in the course.

ST 111 - Introduction to Surgical Theory (4)
Introduces the hospital setting as it relates to the surgical technology field. Consists of professional management, the organization and management of healthcare facilities, the physical environment, disasters or public health emergencies, and communication tactics and techniques utilized in a catastrophe. Covers important components for cultivating a surgical conscience in addition to employable skills, operating room attire, electronic health records proficiency, hand hygiene and surgical scrub. Required: Admission to the Surgical Technology program.

Prerequisite: Prerequisites: BI 231 Human Anatomy & Physiology, MTH 095 Intermediate Algebra, and WR 121Z Composition I all with a grade of "C" or better.

ST 112 - Surgical Technology Theory II (4)
Focuses on surgical instruments, including their production, categorization, identification, handling, processing, storage, and distribution. Covers sterile packaging standards and techniques, storage and distribution, instrument cleaning, decontamination and inspection, and disinfection and sterilization standards

and techniques. Organization and procedures for the central sterile processing and distribution department as well as environmental sanitation and environmental disinfection standards and practices in the surgical setting are included in the additional material. Required: Admission to the Surgical Technology program.

Prerequisite: BI 231 Human Anatomy & Physiology, MTH 095 Intermediate Algebra and WR 121Z Composition I all with a grade of C or better. .

ST 113 - Surgical Technology Theory III (4)
Focuses on the preoperative and intraoperative phases of perioperative case management. Covers the principles and techniques of hemostasis, specimen care, principles of wound healing, including selection and handling of sutures, drains, and dressings, and prevention of retained surgical items. Explores patient preparation, including positioning, transfer, and surgical site preparation.

Lab- Further develops the newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care is emphasized. Professional conduct is required and assessed.

Prerequisite: ST 112 Surgical Technology II with a grade of C or better.

ST 114 - Surgical Technology Theory IV (4)
Introduces students to the technology and surgical equipment used in the operating room, along with the principles and applications for endoscopic, laser, electrosurgery, ultrasonic, robotic, and picture-guided surgery. Covers additional topics such as pharmacology and anesthesia for surgical technologists, post-anesthesia care, emergency patient procedures, and death and dying.

Lab- Builds on the newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: ST 113 Surgical Technology Theory III with a grade of C or better.

ST 210 - Surgical Technology- General and Pediatric Surgery (4)
Introduces General surgery techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Further develops the students' newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 114 Surgical Technology Theory IV with a grade of C or better.

ST 211 - Surgical Technology- Obstetric, Gynecologic, and Genitourinary Surgery (4)
Covers Gynecologic, Obstetric, and Genitourinary surgical techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Further develops the students' newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 114 Surgical Technology Theory IV with a grade of C or better.

ST 212 - Surgical Technology- Orthopedic Surgery (4)
Focuses on Orthopedic surgical techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Builds on newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 114 Surgical Technology Theory IV with a grade of C or better.

ST 213 - Surgical Technology- Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery (4)
Covers Otorhinolaryngologic, Oromaxillofacial, Plastics and Burn surgical techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Further develops newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 210 General and Pediatric Surgery, ST 211 Obstetric, Gybecologic, and Genitourinary Surgery, and ST 212 Pediatric Surgery all with a grade of C or better.

ST 214 - Surgical Technology- Ophthalmologic and Neurosurgery (4)
Focuses on Ophthalmic and Neurosurgery techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Builds on the newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 213 Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery and ST 130 Surgical Technology Clinical Practicum I both with a grade of C or better.

ST 215 - Surgical Technology- Thoracic, Cardiovascular and Vascular Surgery (4)
Covers Thoracic, Cardiovascular, and Vascular surgical techniques for both adult and pediatric patients, including any specialty instrumentation or equipment used in the operating room. The associated surgical anatomy, physiology, and pathophysiology are also covered. Management of pediatric patients undergoing surgical procedures is analyzed and pertinent moral and legal questions are discussed. The functions and obligations of the surgical technologist are highlighted.

Lab- Builds on newly acquired cognitive, psychomotor, and affective surgical technologist skills in a real-world surgical lab setting. The use of aseptic and sterile method principles for secure patient care procedures is emphasized. Professional conduct is required and assessed.

Prerequisite: Prerequisite: ST 213 Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery and ST 230 Surgical Technology Clinical Practicum I both with a grade of C or better.

ST 216 - Surgical Technologist Certification and Job Success (1)
Provides a review of knowledge, skills, and instruction that was provided in all of the other surgical technology courses. Incorporates test-taking strategies and preparation for employment as a surgical technologist. Helps students prepare to sit for the national certification exam during the last week of the course.

Prerequisite: Prerequisite: ST 230 Surgical Technology Clinical Practicum I and ST 213 Surgical Technology - Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery with a grade of C or better.

ST 230 - Surgical Technology Clinical Practicum I (6)
Introduces practical surgical technologist experience while supervised by a qualified preceptor. Students are able to use the skills they have acquired to function as the surgical technologist in a working operating room. Students are required to complete competencies and work a specified number of hours during the term in preparation to sit for the national certification exam.

Prerequisite: ST 210 General and Plastic Surgery, ST 211 Obstetric, Gynecologic, and Genitourinary Surgery, and ST 212 Orthopedic Surgery all with a grade of C or better.

ST 231 - Surgical Technology Clinical Practicum II (6)
Further develops the student's practical skills by allowing them to function more independently as a surgical technologist in a working operating room. Students are

always supervised by a qualified preceptor. Students are required to complete competencies and work a specified number of hours during the term in preparation to sit for the national certification exam.

Prerequisite: ST 213 Otorhinolaryngologic, Oromaxillofacial, Plastic, and Burn Surgery and ST 230 Surgical Technology Clinical Practicum I both with a grade of C or better.

WE1. - Work Experience

WE1. 2800 - CWE Heavy Equipment/Diesel Technology (6)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress toward a student goals with their site supervisor and their CWE Faculty Coordinator. Recommended: Completion of two college terms or consent of CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 2802 - CWE Welding (1-12)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured relfection and assessment of their progress toward a student goals with their site supervisor and their CWE Faculty Coordinator. Recommended: Completion of two college terms or consent of CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 280C - CWE Professional Cooking (1-14)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress towards student goals with their site supervisor and their CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 280D - CWE Construction & Forestry Equipment Technology (6)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured relfection and assessment of their progress toward a student goals with their site supervisor and their CWE Faculty Coordinator. Recommended: Completion of two college terms or consent of CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 280I - CWE Manufacturing Technology (1-12)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress towards student goals with their site supervisor and their CWE Faculty Coordinator. Recommended: Completion of two college terms or consent of CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 280MT - CWE Mechatronics (1-14)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress towards student goals with their site supervisor and their CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE1. 280R - CWE for CADD (1-12)
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress toward student goals with their site supervisor and their CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

Prerequisite: CWE Coordinator Approval.

WE1. 280W - CWE Auto Technology
Gives students practical experience in supervised employment related to their field of study. Students identify job-related learning outcomes, work a specified number of hours during the term, and participate in structured reflection and assessment of their progress

toward a student goals with their site supervisor and their CWE Faculty Coordinator. Recommended: Completion of two college terms or consent of CWE Faculty Coordinator. May be repeated for a maximum of 24 credits.

WE - Work Experience

WE 202 - CWE Seminar (1)
The CWE seminar is a course designed to provide opportunities for students involved in a CWE course to share work-related experiences with their work experience coordinator. May be repeated for a maximum of 4 credits.

WE 280 - CWE: Career Exploration (1 TO 12)
An instructional program designed to give students practical experience in a supervised training position related to their career interest. Students identify learning objectives, work a specified number of hours during the term and participate in related seminar activities. Credits earned are based upon identified objectives and number of hours worked. Required: CWE coordinator approval. May be repeated for a maximum of 24 credits.

WLD - Welding

WLD 110 - Basic Arc Welding (4)
A beginning career course stressing safety and equipment familiarization, with lab exercises for skill development in basic fundamentals of electric arc welding (SMAW) process. It includes technical information lectures in related subjects.

Prerequisite: Prerequisite: WLD 170 Welding I with a grade of C or better, previous welding classes or experience, or instructor's approval.

WLD 111 - Intermediate Arc Welding (5)
A continuing career course stressing safety and equipment familiarization with lab exercises for skill development in the fundamentals of electric arc welding process. It includes technical information lectures in related subjects. The process covered in this course are GMAW and GTAW. Job search skills will also be covered.

Prerequisite: Prerequisite: WLD 110 Basic Arc Welding with a grade of C or better.

WLD 112 - Advanced Arc Welding (5)
Stresses safety and equipment familiarization with lab exercises for skill development in the fundamentals of electric arc welding SMAW and FCAW processes. It includes technical information lectures in related subjects and preparation for AWS welder's certification.

Prerequisite: Prerequisite: WLD 110 Basic Arc Welding and WLD 111 Intermediate Arc Welding with a grade of C or better.

WLD 120 - Fab & Repair Practices I (4)
Introduces oxyacetylene welding and cutting practices on mild steel of various thicknesses and joint configurations in all positions. Covers basic fundamentals of fabrication and joint alignment.

WLD 121 - Fab & Repair Practices II (4)
Covers fundamentals of welding fabrication and repair. Introduces basic procedures in planning, sketching, cost evaluation, ordering, layout, metal preparation, tack-up and final welding.

Prerequisite: Prerequisite: WLD 110 Basic Arc Welding, WLD 120 Fab and Repair Practices I, and WLD 130 Print Reading Applications with a grade of C or better.

WLD 122 - Fab & Repair Practices III (4)
Continues WLD 121 Fabrication and Repair Practices II. Provides a more in-depth approach to welding design, fabrication and repair. Uses the principles and techniques of metal fabrication from drawings.

Prerequisite: Prerequisite: WLD 111 Intermediate Arc Welding and WLD 121 Fab & Repair Practices II with a grade of C or better.

WLD 130 - Print Reading Applications (4)
Introduces principles of welding fabrication drawings. Visualization of parts and projects, dimensioning and sketching are presented to develop the skills necessary to function in the fabrication and repair field and other related fields that require knowledge of prints. Covers the use and application of the AWS welding symbols. Introduces formulas and calculations used in the metal trades.

Corequisite: Corequisite: WLD 150 Math & Measurement for Welders.

WLD 131 - Interpret Metal/Fab Drawings (3)
Introduces the principles of interpretation and application of industrial fabrication drawings. Basic principles and techniques of metal fabrication are introduced by planning and construction of fixtures used in fabrication from drawings. Basic tools and equipment for layout

fitting of welded fabrications are utilized. Covers the use and application of the AWS welding symbols.

Prerequisite: Prerequisite: WLD 130 Print Reading Applications with a grade of C or better.

WLD 132 - Layout Procedures for Sheet Metal and Pipe (4)
A required course for 1st Year Welding and Fabrication Technology majors designed to introduce basic principles of template development for use in the sheet metal and pipe trades. Students will learn to layout, cut and weld sheet metal and pipe using various welding processes.

Prerequisite: Prerequisite: WLD 131 Interpret Metal/Fab Drawings, and WLD 130 Print Reading Applications with a grade of C or better.

WLD 133 - CADD to CNC Processing (1)
Covers the basics of drawing simple 2d flat designs and how to export them to a CNC Plasma and produce the parts drawn. Shows how to implement other drawing and design tools to import, edit and export to CNC Plasma equipment.

Prerequisite: Prerequisite: WLD 130 Print Reading Applications with a grade of C or better.

WLD 150 - Math & Measurement For Welders (4)
Includes operations with whole numbers, fractions, decimals, algebraic expressions, and an introduction to practical geometry and trigonometry. Emphasis is on application, with realistic examples. Explores the use of common measuring tools employed in the industrial shop and trades and examines the types of computation and problem-solving methods utilized in industrial settings.

WLD 151 - Technical Writing For Welders (3)
Covers processes and fundamentals of writing field-specific technical documents, including structure, organization and development, audience analysis, diction and style, revision and editing, mechanics and standard usage required for successful workplace writing.

WLD 152 - Teamwork Skills For Welders (3)
Students will learn teamwork skills, principles, and practices applicable to the industrial workplace, including respectful cooperation and communication, being a team player, and working collectively as a group to accomplish a common goal. Industrial Technical Society (ITS) Welding Co-Curricular Student Club embedded in this course.

WLD 160 - Basic Welding Procedures (2)
A beginning career course stressing safety and equipment familiarization, with lab exercises for skill development in basic fundamentals of electric arc welding (SMAW) process. It includes technical information lectures in related subjects. May be repeated for a maximum of 4 credits.

WLD 161 - Basic Fabrication Practices (2)
Introduces oxyacetylene welding and cutting practices on mild steel of various thicknesses and joint configurations in all positions. Covers basic fundamentals of fabrication and joint alignment. May be repeated for a maximum of 4 credits.

WLD 170 - Welding I (2)
Stresses safety and equipment familiarization, with lab exercises for skill development in basic gas and electric arc welding. Includes technical information lectures in related subjects.

WLD 171 - Welding II (2)
Provides welding skill level required in minor industrial applications. Includes more advanced electric arc-welding and an introduction to gas-shielded arc processes (MIG and TIG), as well as lab and technical information on related welding subjects.

Prerequisite: Prerequisite: WLD 170 Welding I with a grade of C or better.

WLD 172 - Prep For Certification (2)
Designed to allow the individual who has achieved sufficient welding skill proficiency to prepare for applicable ASW Plate Welder Qualification Tests and/or ASME Pipe Welder Qualification tests. Students may test during the course upon receiving instructor written permission based on instructor evaluation of student demonstrated welding skill level, welding technique, weld quality and consistency. Testing is performed by an independent testing agency.

Prerequisite: Prerequisite: WLD 171 Welding II with a grade of C or better.

WLD 174 - Basic Wire-Feed Welding (2)
Provides the basic information and hands-on skills required to operate the MIG short arc (gas metal-arc welding short-circuiting metal transfer), MIG spray transfer (gas metal-arc welding spray transfer), and gas-shielded flux-cored arc welding processes on steel in the flat, horizontal, and vertical positions as applicable to each specific welding process. Technical information lectures will include related subject areas such as basic machine set up and operation, process limitations, the welding machine wire-feeding mechanism, and required shielding gas types for the MIG short arc, MIG spray transfer, and gas-shielded flux-cored welding processes on steel.

Prerequisite: Prerequisite: WLD 171 Welding II with a grade of C or better.

WLD 177 - Gas Tungsten Arc Welding I (2)
Provides hands-on skill development of the gas tungsten-arc welding (GTAW) process, focusing on ferrous materials, with an introduction to non-ferrous alloys. Includes technical information lectures in related subject areas.

Prerequisite: Prerequisite: WLD 170 Welding I with a grade of C or better, or instructor approval.

WLD 178 - Gas Tungsten Arc Welding II (2)
Provides hands-on skill development of the gas tungsten-arc welding (GTAW) process, with in-depth practice on either ferrous or non-ferrous materials. Introduces the use of a welding chamber.

Prerequisite: Prerequisite: WLD 177 Gas Tungsten Arc Welding I with a grade of C or better, or instructor approval.

WLD 181 - Intro To Welding for Machinists (1)
Designed to allow the student the opportunity to develop the welding skills necessary to accomplish basic welding tasks typically encountered by the machinist in the workplace including the building up of work surfaces for subsequent turning, milling, or other machining operations. Lecture and Lab topics will include safety, setup and operation of commonly used welding processes, base metal weldability considerations, filler metal selections, and minimizing warpage and distortion.

WLD 182 - Career Planning & Interview Skills (1)
Assists the student in developing a long-term career plan, developing and improving job interview skills and writing a resume. Subject areas include resume writing tips, pre-interview research, selection of appropriate apparel for the job interview, use of communication skills, and professional presentation. Includes mock job interviews and guest interviewers from industry.

WLD 210 - Basic Pipe Welding Skills (4)
Provides hands-on skill development in basic vertical-up, open-v groove, and butt-joint pipe welding techniques on carbon steel pipe using shielded metal arc welding (SMAW) and gas tungsten-arc welding (GTAW) processes. Includes technical lectures in related subjects.

Prerequisite: Prerequisite: WLD 171 Welding II with a grade of C or better.

WLD 220 - Fabrication Practices IV (4)
In this skill-building course, students gain advanced oxy-fuel cutting and fabrication skills using various structural materials and components. Includes applied mechanical blue print reading, cost estimating, ordering, inventorying materials, layout and final assembly.

Prerequisite: Prerequisite: WLD 132 Layout Procedures for Sheet Metal and Pipe, WLD 122 Fab and Repair Practices III, and WLD 130 Print Reading Applications with a grade of C or better.

WLD 221 - Fab & Repair Practices V (4)
Introduces students to the problem-solving process in many fabrication and repair of welded structures and piping system applications.

Prerequisite: Prerequisite: WLD 220 Fabrication Practices IV with a grade of C or better.

WLD 222 - Fabrication Practices VI (4)
Incorporates blueprint interpretation skills to build projects from instructor provided prints and student drawn prints. May include the use of professional fabrication tools in a production shop environment.

Prerequisite: Prerequisite: WLD 112 Avd Arc Welding and WLD 122 Fab & Repair Practices III with a grade of C or better, or instructor approval.

WLD 230 - Advanced Fab Techniques (3)
A course for 2nd year Welding Technology majors and individuals seeking additional advanced layout and fabrication skills beyond those offered in the prerequisite courses. Subject areas will include use of layout and fabrication tools, structural steel connections and components, chalk line layout, tank layout, ladder layout, stair layout, ring-flange layout, pipefitting fit-up, fall-protection, and rigging.

Prerequisite: Prerequisite: WLD 112 Advanced Arc Welding, WLD 131 Interpret Metal/Fab Drawings, WLD 122 Fab and Repair Practices III, and WLD 130 Print Reading Applications with a grade of C or better.

WLD 231 - Welding & Fabrication Capstone (4)
The student will fabricate a predetermined, instructor-approved project that incorporates subject areas learned over the course of the Welding and Fabrication Technology Program including math and measurement, cost estimation and calculation, blueprint reading, interpretation of welding symbols, layout, pipe template development, use of welding and metal cutting processes, use of tools of the Trade, working to tolerance, shop and field welding, fabrication, pipe layout, and pipe welding with Stick and TIG, meeting industry standards for workmanship and quality control. Evaluation of the student's completed Capstone project will be done to industrial standards for acceptability.

WLD 232 - Advanced Welding Techniques (2)
This is a second year course required for Welding and Fabrication degree students. Students will learn to make high quality welds and learn new techniques when faced with challenging weld positions and material shapes. All major welding processes will be utilized.

Prerequisite: Prerequisite: WLD 122 Fab & Repair Practices III with a grade of C or better.

WLD 240 - Machinery Operation Maintenance (3)
A comprehensive study of the in-plant installation, operation and maintenance of manufacturing machinery. Includes safety, rigging, pumps, compressors, bearings, lubrication, motors with couplings, and clutches. Also includes machinery alignment and how it is accomplished. Required: Instructor approval.

WLD 241 - Basic Electricity & Fluid Power For Welders (3)
Required course for 2nd Year Welding Technology majors that provides basic and important-to-know introductory-level electrical and fluid power fundamentals as applicable to the welding trade. Includes nomenclature, terminology, basics of electricity, 12-volt trailer wiring, hydraulic components and systems, mobile hydraulics, and pneumatics.

WLD 250 - Practical Metallurgy (3)
Required for Welding and Fabrication Technology majors. Includes practical metallurgy information, an introduction to inspection, and references to code welding. Covers the importance, role, and relationship of metallurgy to the scientific and technological issues that affect societies in the United States and globally.

Prerequisite: Prerequisite: WLD 112 Advanced Arc Welding with a grade of C or better or instructor approval.

WLD 251 - Weld Inspection and Code (2)
An introductory course to inspection of welds, and weldments while utilizing code standards. This course will give insight to what welders may experience with welding to code standards as well as how weld inspectors work to ensure quality parts.

Prerequisite: Prerequisite: WLD 170 Welding I with a grade of C or better.

WLD 260 - Intro To Pipe Welding (2)
A required course for 1st Year Welding and Fabrication Technology majors designed to introduce basic principles and procedures of pipe welding and providing limited experience with SMAW, TIG, and other welding processes on steel pipe. Students will layout, cut, fit and weld various pipe joint configurations as part of the curriculum.

Prerequisite: Prerequisite: WLD 111 Intermediate Arc Welding and WLD 132 Layout Procedures for Sheet Metal and Pipe with a grade of C or better or instructor approval. WLD 132 may be taken concurrently.

WLD 281 - Welding Seminar (1-10)
Open-entry/open-exit course providing skills upgrading. For variable credit classes, additional tuition charges of 21% (based on the in-state tuition rate) will only be applied to the number of credits registered for. May be repeated for a maximum of 4 credits.

WR - Writing

WR 115 - Intro to College Writing (3)
Introduces college level critical inquiry in academic and professional reading and writing. WR 115 students critically read, summarize, and respond in paragraph format. Students develop expository essay writing skills, review conventions, and use individual and collaborative processes. Note: This course does not satisfy institutional writing requirements for the degree seeking or transfer student.

WR 121Q - Support Lab for WR 121Z (1)
WR 121Q focuses on the foundational skills and concepts needed to be persistent and successful in WR 121Z Composition I. It provides students with appropriate support as needed in idea development, essay structure, sentence and paragraph structure, thesis development, basic grammar skills, technology, information literacy, and reading skills. **Note**: Students are expected to spend one hour per week with one of the designated support services (learning center, library, and writing center). Contact your instructor for more information.

Corequisite: Corequisite: WR 121Z Composition I.

WR 121Z - Composition I (4)
WR 121Z engages students in the study and practice of critical thinking, reading, and writing. The course focuses on analyzing and composing across varied rhetorical situations and in multiple genres. Students will apply key rhetorical concepts flexibly and collaboratively throughout their writing and inquiry processes.

WR 122Z - Composition II (4)
WR 122Z builds on concepts and processes emphasized in WR 121Z, engaging with inquiry, research, and argumentation in support of students' development as writers. The course focuses on composing and revising in research-based genres through the intentional use of rhetorical strategies. Students will find, evaluate, and

interpret complex material, including lived experience; use this to frame and pursue their own research questions; and integrate material purposefully into their own compositions.

Prerequisite: WR 121Z or equivalent with a grade of C or better.

WR 123 - English Composition: Research (4)
Introduces informative and analytical writing supported by research. Includes designing a research plan, using primary and secondary sources critically, developing research methods, using proper documentation, and developing writing strategies for longer papers.

Prerequisite: WR 121Z Composition I or equivalent with a grade of C or better.

WR 220 - Stories of the U.S.-Mexico Border (4)
Analyzes stories from and about the US-Mexico border. Explores and challenges conventional ideas about undocumented immigration in the US and considers immigration as a complex phenomenon with various causes. Examines historical and current causes of migration across the US-Mexico border and the difficulties experienced on the migrant trail. Analyzes discriminatory practices of dehumanization, deportation, and detention and reveals immigrant resistance to oppression.

WR 227Z - Technical Writing (4)
WR 227Z introduces students to producing instructive, informative, and persuasive technical/professional documents aimed at well-defined and achievable outcomes. The course focuses on presenting information using rhetorically appropriate style, design, vocabulary, structure, and visuals. Students can expect to gather, read, and analyze information and to learn a variety of strategies for producing accessible, usable, reader-centered deliverable documents that are clear, concise, and ethical.

Prerequisite: WR 121Z or equivalent with a grade of C or better.

WR 240 - Creative Writing: Nonfiction (3)

Explores using creative writing techniques (plot, characterization, setting, metaphor, point of view, voice, etc.) in nonfiction essay writing. Emphasizes the elements of the creative process: personal reflective writing, creative drafting strategies, writing workshops, and revision. Recommended: WR 121Z Composition I. May be repeated for a maximum of 6 credits.

WR 241 - Creative Writing: Fiction (3)

Applies elements of short fiction (dialogue, setting, character conflict, etc) using workshop sessions in which students discuss the exercises and stories of their classmates. May be repeated for a maximum of 6 credits.

Prerequisite: Prerequisite: WR 121Z Composition I with a grade of C or better.

WR 242 - Creative Writing: Poetry (3)

Applies basic elements of poetry, types of poetry, uses for poetry and the process of creating poetry. Recommended: WR 121Z Composition I and ENG 104Z Literature: Fiction or ENG 106Z Literature: Poetry. May be repeated for a maximum of 6 credits.

WR 243 - Creative Writing: Script Writing Workshop (3)

Focus on writing and submitting scripts for class discussion and analysis. Studies established writers and film for techniques, structures and styles. Recommended: WR 121Z Composition I; ENG 145 Intro to Film Study, 1968-1999. May be repeated for a maximum of 6 credits.

WR 244 - Advanced Creative Writing: Fiction (3)

Focuses on continuing to apply the techniques and structures of fiction writing introduced in WR 241. Includes writing fiction, having work critiques by instructor and peers, and critiquing that of others in a workshop setting. May be repeated for a maximum of 6 credits.

Prerequisite: Prerequisite: WR 241 Creative Writing: Fiction.

WR 280 - CWE English/Writing (1-14)
Gives students practical experience in supervised employment related to writing. Students identify job performance objectives, work a specified number of hours during the term, and attend a related CWE seminar. Note: Credits are based on identified objectives and number of

hours worked. Prerequisite: CWE coordinator approval. May be repeated for a maximum of 24 credits.

WS - Women's Studies

WS 223 - Intro to Women, Gender, Sexuality Studies (3)
Multidisciplinary introduction to women, gender, and sexuality studies. Focuses on the lives and status of women in society and explores ways institutions such as family, work, media, law and religion affect different groups of women. Explores issues of gender, race, class, age, sexual orientation, size and ability. Recommended: College-level writing.

WS 225 - Disney: Gender, Race, Empire (3)
Explores constructions of gender, race, class, sexuality, and nation in the animated films of Walt Disney; introduces concepts in film theory and criticism, and develops analyses of the politics of representation. Recommended: Majors should complete WS 223 first.

WS 280 - Global Women (3)

Focuses on women's experiences throughout the world and examines women's issues and status cross-culturally. Recommended: College level reading and writing skills.

HOW TO GET STARTED: ADMISSIONS

Admissions Office

Takena Hall 115, 541-917-4811, admissions@linnbenton.edu

https://www.linnbenton.edu/future-students/join-lb/index.php

LBCC maintains an “open door” admission policy, meaning that anyone who is at least 18 years old is eligible to enroll in classes regardless of educational background. Students may complete an online application, student data form, or registration request form and register for the desired class at any time during Open Registration. Before you can receive a certificate or degree, you must become admitted, by completing the admission process.

Students Seeking Degrees or Certificates:

Students working toward a degree or certificate, intending to register for credit courses, or who have applied for financial aid must complete the admission process. Fully admitted students will be eligible for Priority Registration as either a full-time or part-time student and be considered for federal financial aid, if they choose to apply. Registration is on a first-come, first-served basis. For all programs, the college reserves the right to give higher priority to district residents.

Students Not Seeking Degrees or Certificates:

Students wanting to take non-credit courses should work with the specific department offering the course to understand the registration process.

Transfer Students

Linn-Benton Community College accepts college-level transfer credit from regionally accredited U.S. post-secondary institutions. LBCC's Admissions Office uses Oregon State University's transfer course equivalency tables as a guide to determine equivalencies to LBCC's general education requirements.

Transfer credit evaluation is a partnership between LBCC's Admissions Office and faculty. The Admissions Office will evaluate transfer credit to determine if it is equivalent to LBCC's general education course requirements for AS, AAOT, AGS, AAT, AST, and AAS degrees, and for certificates. Upon request, faculty will evaluate transfer coursework for equivalencies to LBCC major-specific requirements for degrees and certificates. Additional documentation such as catalog descriptions and/or syllabi may be required to support a faculty review.

To have transfer credit evaluated for equivalency to LBCC courses, official transcripts must be submitted to LBCC's Admissions Office, and the transcripts must be able to be matched to a valid LBCC student ID number. LBCC considers transcripts to be "official" if they have been received directly from an issuing institution (whether on paper in a sealed sending institution envelope or a certified electronic copy) and are properly signed/authenticated by the sending institution. All transcripts received by the Admissions Office become the property of LBCC. The Admissions Office will not provide copies of transcripts from other institutions.

Students will be notified via email upon receipt of their transcript(s) and again upon completion of the credit evaluation. Results of the credit evaluation may be viewed in the Unofficial Transcript sections of the student's Webrunner account and in DegreeWorks.

Transfer credit is not included in determining academic standing at LBCC. Transfer GPA and course completion is included in establishing initial Satisfactory Academic Progress at LBCC for federal Financial Aid.

Linn-Benton Community College accepts college-level credits in the following manner:

U.S. Institution Transfer Credit

Regionally accredited U.S. institutions of higher education	Coursework must be 100-level or above, however developmental-level coursework that can be directly correlated with an equivalent developmental LBCC course can be transferable. Coursework must be graded with the range of A-D (or numeric equivalent), or with a Satisfactory/Pass designation, where that grade is defined by the issuing institution as equating to a letter grade of C or better.

	LBCC uses Oregon State University's transfer credit equivalency tables as a guide to equivalencies. General education courses that do not have direct equivalences to LBCC courses may be eligible for transfer and potential use as electives. In some cases, courses will be designated with subject codes of LDT, 1XX or 2XX. Major-specific courses that do not equate to specific LBCC courses will be granted Lower Division Transfer Credit; courses that do not equate to Career Technical courses in an AAS degree or certificate will be granted Career Technical credits at LBCC. Credits not applied to degree and/or certificate requirements are posted as block transfer on LBCC transcripts.
U.S. Military (Joint Service Transcripts, DD-214)	LBCC's Admissions Office will apply ACE guidelines when determining college credit transferability from U.S military transcripts and service documents.
Credit for Prior Learning	Credit awarded for prior learning, which includes Advanced Placement (AP), International Baccalaureate (IB), College Level Examination Program (CLEP), Credit by Challenge Exam, Credit for Military Training, Credit for Professional Licensure, and Credit for LBCC Training, will be posted on a student's LBCC academic transcript in the manner outlined in AR 4020-01 .
Coursework from Nationally Accredited Institutions	Upon request, coursework from Nationally Accredited Institutions may be reviewed for LBCC equivalency.
Non U.S. Institution Transfer Credit	
The AACRAO Electronic Database for Global Education (EDGE)	Official transcripts and course descriptions must be submitted to LBCC's Admissions Office. Official transcripts and course descriptions must be in English. Non-English transcripts and course descriptions must be translated into English by a college-approved certified translator or evaluated by an NACES service provider. English Composition will not be accepted in transfer unless taken at an accredited U.S. college or university or an accredited English-speaking university.

International Students

International Office
Willamette Hall 115
international@linnbenton.edu

541-917-4813, 541-917-4847

https://linnbenton.edu/future-students/explore-lb/international/index.php

International students who wish to study full-time at LBCC must complete the international application. Application deadlines and requirements are listed online at https://linnbenton.edu/future-students/explore-lb/international/application.php. Upon approval of admission, students will receive an I-20 and letter of acceptance from the International Office.

Students on F-2 visas may be admitted to study at LBCC for 11 or fewer credits. For questions regarding F-2 and other visa types, email the International Office at international@linnbenton.edu.

Programs for High School Age Students

LBCC continues to expand opportunities for high school-age students through partnerships with area public and private high schools. High School students have the opportunity to earn college credit by taking courses directly from LBCC (Expanded Options/Alternative Learning Opportunities/Post Graduate Scholar Program*), and at their respective high school from an approved high school teacher (College Now).

For more information about these programs, call the High School Partnerships Office at 541-917-4236.

In addition to formal partnerships, LBCC offers a variety of other programs, courses, and activities for high school youth, such as drivers' education, tractor safety, and campus tours.

For more opportunities for high school age students, please visit: https://www.linnbenton.edu/future-students/explore-lb/hsp/index.php

*program contingent upon continued state funding

Students Younger than Age 18

Students 16 or 17 Years Old

Credit classes: Students 16 or 17 years old, who haven't completed high school and/or don't hold a GED, must file a Campus High School Programs form and complete the Campus High School Program enrollment process, which includes a required orientation for new students, before they can take a credit class. Forms are available online on the High School Partnerships website and in Takena Hall. Students under the age of 16 may be eligible to enroll through the under 16 process (see below).

GED classes: Students 16 or 17 years old who want to take GED preparation classes must provide a letter, on official letterhead, stating release from compulsory attendance, or a Parent Assurance and GED Authorization Letter from the Linn Benton Lincoln Education School District via the home school office.

Non-credit classes: Students 16 or 17 years old need parental consent unless otherwise noted in the class description. All minors must meet the age requirements at the time of registration.

Students Under 16

Credit classes: Students *under the age of 16* who have not graduated from high school and wish to enroll in credit classes will be required to submit a Campus High School Program form, current transcript, letters of recommendation, and will need to complete writing samples. Materials will be reviewed by the LBCC Campus High School Programs advisor. If the advisor determines the student can move forward in the under 16 process, an interview will be scheduled for the student with the LBCC Campus High School Programs advisor and faculty member. An enrollment decision will be made following the interview. Please review the calendar and deadlines for under 16 requests at https://www.linnbenton.edu/future-students/explore-lb/hsp/chsp.php. Call the High School Partnerships Office at 541-917-4236 for more information.

Non-Credit classes: Students *under the age of 16* need parental consent and instructor authorization to register. All minors must meet the age requirements at the time of registration.

LBCC/OSU Degree Partnership Program

Takena Hall 211, 541-917-4237, dpp@linnbenton.edu

https://www.linnbenton.edu/future-students/explore-lb/transfer-center/osu.php

Each year, more than 3,000 students are enrolled in this innovative dual-enrollment program that allows students to take classes at both LBCC and Oregon State University, while using financial aid (if qualified) to pay for their classes at both institutions). Students pay OSU tuition for classes taken at OSU and LBCC tuition for classes taken at LBCC. Students who want to transfer to OSU are encouraged to apply to the Degree Partnership Program as soon as they are eligible, even if they don't choose to take classes at OSU right away. Being dual-enrolled protects students from degree requirement changes at OSU, and also gives students access to classes and services at both institutions. Students taking courses at both institutions have full access to services at both schools, including OSU's Dixon Recreation Center, Student Health Center, University Counseling and Psychological Services, the OSU craft center, plus many clubs and student organizations. Dual-enrollment students not taking classes at OSU can opt to pay partial fees for access to certain services, like the Student Health Center and Dixon Recreation Center. Dual-enrollment students also have

access to OSU housing, even if they choose to take all of their classes at LBCC initially.

Students who meet OSU's freshman admissions requirements can sign-up for the program by checking a box on their OSU application: https://admissions.oregonstate.edu/apply-choose-application. Students who don't meet OSU's admissions requirements can start at LBCC and apply to OSU and the Degree Partnership Program as a transfer student. Automatic admission is granted for students who have:

- Completed 24 graded transferable credits
- Completed college math (MTH 105Z or MTH 111Z) with a grade of C- or better
- Completed WR 121Z with a grade of C- or better
- Achieved a 2.25+ GPA

OSU uses a holistic admission process, so some students who do not meet the requirements may still be admitted. Contact partnerships@oregonstate.edu with questions.

Additional information about transfer student requirements can be found at https://admissions.oregonstate.edu/transfer-student-requirements.

LBCC/WOU Degree Partnership Program

Takena Hall 211, 541-917-4237, dpp@linnbenton.edu

https://www.linnbenton.edu/future-students/explore-lb/transfer-center/wou.php

The Degree Partnership Program with Western Oregon University (WOU) is very similar to the partnership with OSU. Students can take classes at both LBCC and Western Oregon and use financial aid to pay for classes at both schools. Students taking courses at both institutions have full access to services at both schools.

Students who meet WOU's freshman admissions requirements can sign-up for Degree Partnership by applying to WOU and then signing a form through their WOU financial aid portal.

Students who don't meet WOU's admission requirements can start at LBCC and apply to WOU and the Degree Partnership Program as a transfer student once they have:

•

Completed 36 transferable, college-level credits

•

Achieved a 2.25+ GPA

Additional information about transfer student requirements can be found at: https://wou.edu/admission/transfer/

LBCC/OIT Partnership

Takena Hall 211, 541-917-4237, dpp@linnbenton.edu

https://www.linnbenton.edu/future-students/explore-lb/transfer-center/oit.php

Start your bachelor's degree at Linn-Benton Community College and finish at Oregon Institute of Technology (OIT). The LBCC/OIT partnership provides opportunities for students to complete coursework that will transfer into bachelor's programs at OIT. Many students who plan to transfer to OIT do their pre-dental hygiene, pre-medical imaging, and pre-nursing coursework at LBCC. LBCC and OIT have agreements that maximize credit transfer for students. OIT is a 4-year public university with programs in Klamath Falls and Portland.

Special Admission Programs

Some LBCC programs have stringent admission requirements, which were set to administer the college's resources effectively and to ensure that each student has a reasonable chance of success. These programs include:

- Dental Assistant
- Diagnostic Imaging
- Medical Assistant
- Nursing
- Occupational Therapy Assistant
- Phlebotomy
- Surgical Technician

Special admission programs often require prerequisite courses or skills assessments. Placement scores used as assessment for special admission programs are valid for five years. For most programs, qualified in-district applicants receive priority in the selection process. (Note: The LBCC district does not include all of Linn and Benton counties.) A student who does not meet a course prerequisite or competency for a special admission program may appeal by filing a petition. Petitions will not be accepted based on any other criteria used in the selection process. Admission requirements and application materials for each program may be found on the applicable program's webpage.

In addition to application prerequisites, the Nursing, Diagnostic Imaging and Occupational Therapy Assistant

programs admit students according to rank on a "points system". Interested applicants should review the current application guide to ensure that all requirements are met and gain an understanding of the awarding of admission points. Students admitted to the program must also meet additional departmental requirements which can be found in the application guide. Admitted students are financially responsible for immunizations, health screening, criminal background check, drug testing and certification fees.

HOW TO GET STARTED: REGISTRATION

Registration Office

Takena Hall 115, 541-917-4811

To Register for Classes

Continuing, admitted students will be assigned a priority registration time each term based on the number of credits they have earned at LBCC plus their currently registered LBCC credits. See the Academic Calendar on LBCC's website for registration times and information about the registration process.

Non-degree seeking students can register for 0-5 credits during Open Registration times.

Waitlist Procedures

If a class is full, students may be able to add themselves to a waitlist if there is availability. If someone registered in the class drops it, the first student on the waitlist will be notified via their Linn-Benton student email account. Once notified, the waitlisted student will have 48 hours to register for the course. If they do not register during that time frame, they will be dropped from the waitlist.

Understanding Course Numbers

All Lower Division Transfer (LDT) and Career Technical Education (CTE) courses are taught at a college level. LDT courses with letter prefixes and numbers of 100 or higher should transfer to a four-year institution.

CTE courses with letter prefixes and numbers of 100 or higher, letter-prefix courses that have numbers below 100, or numbers that include a decimal point generally will not transfer to a four-year institution. However, there are some exceptions; see your advisor concerning transferability.

You are not limited to taking all LDT or all CTE courses; you may mix and match courses depending on your program. Consult an advisor.

If a course number is changed, the new course number will appear on a student's permanent record only if taken after the change was approved.

Common Course Numbering (CCN)

In an effort to improve and clarify the transfer of courses between community colleges and public universities, and as charged by SB 233, a common course numbering (CCN) system was created by the Oregon Transfer Council to align course numbers, titles, credits, and outcomes for high transfer courses across all 17 community colleges and all 7 public universities in Oregon. When transferring to an Oregon higher education institution, CCN courses will be accepted as if they were taken at the institution students transfer to (that is, the receiving institution).

At this time, 33 LBCC courses have been aligned and updated under this system. All CCN courses are identified by a 'Z' at the end of the course number, e.g. WR 121Z.

Students who completed any of these courses prior to CCN alignment do NOT need to retake the course as long as it was completed with a grade of C or above to meet degree requirements.

Former LBCC Course Number	***New Common Course Number***
BA 101A	BA 101Z (p. 129)
BA 101B	BA 169Z (p. 130)
BA 211	BA 211Z (p. 130)
BA 213	BA 213Z (p. 130)
BA 226	BA 226Z (p. 131)
BI 221	BI 221Z (p. 133)
BI 222	BI 222Z (p. 133)
BI 223	BI 223Z (p. 133)

CH 221	CH 221Z (p. 140) & CH 227Z (p. 140)
CH 222	CH 222Z (p. 140) & CH 228Z (p. 141)
CH 223	CH 223Z (p. 140) & CH 229Z (p. 141)
COMM 100	COMM 100Z (p. 142)
COMM 111	COMM 111Z (p. 142)
COMM 218	COMM 218Z (p. 143)
EC 201	EC 201Z (p. 151)
EC 202	EC 202Z (p. 151)
ENG 104	ENG 104Z (p. 156)
ENG 106	ENG 106Z (p. 156)
MTH 105	MTH 105Z (p. 181)
MTH 111	MTH 111Z (p. 181)
MTH 112	MTH 112Z (p. 181)
MTH 243	STAT 243Z (p. **Error! Bookmark not defined.**)
MTH 251	MTH 251Z (p. 182)
MTH 252	MTH 252Z (p. 182)
MTH 253	MTH 253Z (p. 182)
PSY 201	PSY 201Z (p. 205)
PSY 202	PSY 202Z (p. 205)
SOC 204	SOC 204Z (p. 206)
SOC 205	SOC 205Z (p. 206)
SOC 206	SOC 206Z (p. 206)
WR 121	WR 121Z (p. 215)
WR 122	WR 122Z (p. 215)
WR 227	WR 227Z (p. 216)

Corequisite Support Courses

To support students in completing college-level math and writing courses, corequisite support courses have been developed to be taken simultaneously alongside the "parent" course. Corequisite support courses are numbered to match the "parent" course but are identified with a 'Q' at the end of the course number, e.g. WR 121Q. More details on each course can be found in the Courses section of the catalog.

Parent Course	*Corequisite Course*
MTH 105Z (p. 181)	MTH 105Q (p. 181)
MTH 111Z (p. 181)	MTH 111Q (p. 181)
WR 121Z (p. 215)	WR 121Q (p. 215)

Prerequisites

Many courses require prerequisite courses to be successfully completed prior to enrollment. Review the Courses section of this catalog for prerequisite information before registering. If you are uncertain about whether you have met a specific prerequisite, check your unofficial transcripts in your WebRunner student account, ask your advisor, or the instructor of the class. If you have not met the prerequisite requirement, you may be prevented from registering or dropped from the course.

Class Schedule Changes

To make changes to your class schedule, you may use your WebRunner student account or submit a schedule change to Registration. For classes that require an instructor's signature, you will need to request that your instructor give you an override in their Webrunner account. Then, you must register for the course in your Webrunner account.

During the first week of the term, you will need an instructor override to add a class. An instructor can also give you a capacity override to add a class that is full. Registration deadlines for less-than-full-term classes are listed in the online schedule of classes.

Students have until the end of the seventh week of each term to officially withdraw from a full-term class and earn a "W" grade. Withdrawal deadlines for shorter classes are listed in the schedule.

(Note: "W" grades are considered non-completion grades for financial aid.)

Auditing Classes

Students can request audit status either at the time of registration or during the add period for a class. Instructors reserve the right to disenroll students who have not met prerequisite requirements for the course they want to audit. Fees for auditing a class are the same as regular enrollment fees. You are encouraged to discuss your learning goals with the instructor prior to auditing a class. Auditing students are expected to fully participate in class activities; the instructor is under no obligation to grade or record your work. A grade of "AU" will be recorded on the transcript.

ACADEMIC INFORMATION AND REGULATIONS

Academic Calendar

The college operates on a term system (also called a quarter system). Fall term begins in late September and ends in early December; Winter term begins in early January and runs until mid-March; Spring term begins in late March and ends in mid-June; and Summer term runs from late June until late August. See https://linnbenton.edu/about/calendar/index.php#events/tag/*Calendar%20-%20Academic.

Academic Probation and Suspension

Linn-Benton Community College applies academic standing regulations to ensure student academic performance is consistent with progression toward the completion of declared degree and/or certificate requirements.

Degree-seeking students registered for credit classes after the add/drop deadline has passed each term are subject to academic standing regulations for that term. Students are considered to be in good academic standing if they earn a 2.00 GPA or higher each term and maintain a cumulative GPA of 2.00 or higher. Students on Academic Warning, Academic Probation, or Academic Suspension will be notified of their status via their LBCC email account.

Good Standing -- Students with both a **term and cumulative GPA** of 2.00 or higher are considered to be in Good Standing.

Academic Warning -- Students will be on Academic Warning when:

1. their **term GPA** drops below a 2.00, or
2. their **cumulative GPA** is below a 2.00 and they have attempted 36 credits or less.

Students who do not achieve a subsequent term and/or cumulative GPA of 2.00 or higher during their Academic Warning term may be placed on Academic Probation.

Academic Probation -- Students will be on Academic Probation when:

1. they are on Academic Warning or Academic Probation and their **term GPA** is below a 2.00 and they have attempted 18 or more credits, or
2. their **cumulative GPA** is below a 2.00 and they have attempted 37 or more credits.

Students who do not maintain a subsequent term and cumulative GPA of 2.00 may be placed on Academic Suspension.

Academic Suspension -- Students will be placed on Academic Suspension when they are on Academic Probation, and both their **term and cumulative GPA** are below a 2.00, and they have attempted 37 or more credits. Students on Academic Suspension will not be allowed to register for classes until they have an Academic Suspension Appeal to Return approved.

Appeal to Return

Students who are academically suspended must submit an Appeal to Return prior to re-enrolling in credit courses. Deadlines to submit appeals for each term will be listed on the LBCC website. Appeals to Return that are submitted by the appeals deadline each term will be reviewed and decided by the Academic Appeals Committee prior to the drop/add deadline for the following term. Appeals not received by the deadline will be reviewed during the next appeal review period in the following term. Students who are approved to return may need to complete particular requirements in order to re-enroll, including but not limited to meeting with LBCC academic support staff, taking a limited number of credits, or being limited in the types of classes they may take until they have demonstrated academic improvement.

Minimum Academic Standard for Continuation in a Program

Students must maintain a 2.00 GPA in all major-specific course requirements to continue in a program. Students who do not meet this requirement may petition their program department for reinstatement. Some programs may have more restrictive requirements, which are indicated in the college catalog.

Credit Hours and Credit Loads

Generally speaking, a class that meets one hour a week for one term with an expected homework load of two hours outside of class will be a one-credit class (whether remote or in class work). Classes that meet three hours per week with six hours of outside homework will yield three credits. Lab classes yield one credit for each two or

three hours of lab time. Most classes require two hours of homework in addition to each class hour. See BP 4055 Credit Hour Policy for college policy.

To earn a transfer degree in two years, students should schedule an average of 15 credits per term to accumulate 90 credits in six terms. Fifteen credits translates to an average of a 45- hour work week. Students may take no more than 20 credits in any single term without advisor approval. The time required to complete a program may vary according to program preparation and class availability.

Credit for Prior Learning (CPL)

LBCC offers a number of options for students to earn credit based on prior learning or experience. Credit is awarded based on recognized standards and with the approval of faculty. Awarded credit is transcripted in accordance with standards established by the American Association of Collegiate Registrars and Admissions Officers (AACRAO).

Credit By Exam

College Level Examination Program (CLEP):

LBCC awards credit for courses articulated to CLEP exams. Students who meet the score requirements must submit official scores to the LBCC Admission/Registration office to receive credit. Accepted CLEP scores and the related credit awards are published on the LBCC website. Credit is awarded in alignment with Oregon State University. Contact Testing Services in Red Cedar Hall, Room 111 or call 541-917-4781 for more information.

Credit by Challenge Exam:

Students may earn course credit by successfully completing an exam or through skill demonstration. If you believe you have mastered material presented in a course listed on LBCC's Course Challenge List, you can sign up for Credit by Examination with Testing Services.

Before a Course Challenge can be taken, a nonrefundable processing fee consisting of 30 percent of the tuition per challenged course per credit hour. An additional testing fee may be required. For details about Credit by Examination, contact Testing Services in Red Cedar Hall, Room 111 or call 541-917-4781.

Advanced Placement (AP):

LBCC awards credit for courses articulated to AP exams. Students who complete college-level work in high school under the Advanced Placement Program sponsored by the College Entrance Examination Board and who receive satisfactory grades (3, 4 or 5) in examinations administered by the board may, on admission to LBCC, be granted comparable credit towards a degree. Students who meet requirements must submit official scores to receive credit. LBCC follows the score and credits to be awarded as established by a statewide agreement among community colleges and public universities. Accepted AP scores and related course credit awards are published in the Advanced Placement Equivalency Table (p. 228). For details about Advanced Placement, contact Admissions and Registration.

International Baccalaureate (IB):

LBCC awards credit for courses articulated to IB exams. LBCC recognizes IB achievement by awarding credit to students who score 5 or above on higher level IB exams. Students who meet requirements must submit official scores to receive credit. LBCC follows the score and credits to be awarded as established by a statewide agreement among community colleges and public universities. Accepted IB scores and related course credit awards are published in the International Baccalaureate Equivalency Table (p. 229). For details about International Baccalaureate, contact Admissions and Registration.

Credit for Training and Experience

Credit for Military Training:

LBCC follows American Council of Education guidelines in awarding credit for military training. Official transcripts from respective branches of the military are required. Students may request evaluation of military credit by furnishing the Office of Admissions with a Joint Service Transcript (JST). Service members who present a DD-214 are eligible to be awarded three physical education activity credits. Students may need to provide an official ACE transcript. Separate transcripts from the US Coast Guard can also be provided and evaluated for credit.

Credit for Professional Licensure:

Credits that are available to be awarded through professional licensure are approved through the LBCC's Curricular Issues Committee. A list of these courses is available to students on the Credit for Prior Learning webpage.

Credit for LBCC Training:

Students in the LBCC non-credit childcare training program are eligible to earn education course credits upon successful completion of designated training. Faculty certify successful completion of the required training sequence and inform students of the option to have

course credit awarded. Contact the Early Childhood Education department for information.

Advanced Placement Equivalency Table

	AP Score	Credits	Equivalent Course(s)
Art History	3+	6	ART LDT with AHR & HUMA
Art Studio 2-D Design	3+	4	ART 115
Art Studio 3-D Design	3+	4	ART 117
Art Studio Drawing	3+	4	ART 131
Biology	3	12	BI 101, BI 102, BI 103
Biology	4-5	12	BI 221Z (p. 133), BI 222Z (p. 133), BI 223Z (p. 133)
Math Pre-Calculus	3	4	MTH 111Z (p. 181)
Math Pre-Calculus	4-5	8	MTH 111Z (p. 181), MTH 112Z (p. 181)
Math Calculus AB	3	5	MTH 251Z (p. 182)
Math Calculus AB	4-5	10	MTH 251Z (p. 182), MTH 252Z (p. 182)
Math Calculus BC*	3	10	MTH 251Z (p. 182), MTH 252Z (p. 182)
Math Calculus BC*	4-5	14	MTH 251Z (p. 182), MTH 252Z (p. 182) , MTH 264 & MTH 265
Chemistry	3	5	CH 121
Chemistry	4-5	15	CH 221Z (p. 140) & CH 227Z (p. 140), CH 222Z (p. 140) & CH 228Z (p. 141), CH 223Z (p. 140) & CH 229Z (p. 141)
Chinese Language & Culture	3+	15	TR LDT with AHR, ALOT, CL & HUMA
Comparative Govt & Politics	3	3	PS 201
Comparative Govt & Politics	4-5	3	PS 204
Computer Science A	3	4	LDT Credit
Computer Science A	4-5	4	LDT Credit
Computer Science Principles	3+	4	LDT Credit
English Language & Comp	3+	4	WR 121Z (p. 215)
English Literature & Comp	3+	3	ENG 104Z (p. 156)
Environmental Science	3+	4	LDT Credit
European History	3	4	HST 102
European History	4-5	8	HST 102, HST 103
French Language & Culture	3+	12	TR LDT with AHR, ALOT, CL & HUMA
German Language & Culture	3+	12	TR LDT with AHR, ALOT, CL & HUMA
Human Geography	3+	4	GEOG LDT with AHR, CD & CL
Italian Language & Culture	3+	12	TR LDT with AHR, ALOT, CL &

			HUMA
Japanese Language & Culture	3+	12	TR LDT with AHR, ALOT, CL & HUMA
Latin	3+	12	TR LDT
Macroeconomics	3+	4	EC 202Z (p. 151)
Microeconomics	3+	4	EC 201Z (p. 151)
Music Theory	3+	6	MUS 121, MUS 122
Physics 1: Algebra Based	3	4	PH LDT with MS, PS & SMA
Physics 1: Algebra Based	4-5	5	PH 201
Physics 2: Algebra Based**	3	4	PH LDT with MS, PS & SMA
Physics 2: Algebra Based**	4-5	5	PH 203
Physics C: Electricity & Magnetism	3	4	PH LDT with MS, PS & SMA
Physics C: Electricity & Magnetism	4-5	5	PH 213
Physics C: Mechanics	3	4	PH LDT with MS, PS & SMA
Physics C: Mechanics	4-5	5	PH 211
Psychology	3+	4	PSY 201Z (p. 205)
Spanish Language & Culture	3+	12	SPN 201, SPN 202, SPN 203
Spanish Literature & Culture	3+	4	ENG LDT with AHR & HUMA
Statistics	3	4	MTH LDT with AMT
Statistics	4-5	4	STAT 243Z (p. **Error! Bookmark not defined.**)
United States Govt & Politics	3+	3	PS 201
United States History	4-5	8	HST 201, HST 202
World History	3	3	HST LDT with AHR, CD, CL, LAC2, SS, SSOT & WC
World History	4-5	6	HST LDT with AHR, CD, CL, LAC2, SS, SSOT & WC

* Students taking both Calculus AB and BC have a maximum credit award of 3 courses of Calculus

** Students taking both Physics 1 and 2 have a maximum credit award of 3 courses for Physics

Note: Students taking more than two Art Student exams have a maximum credit award of 8 credits for Art Studio.

International Baccalaureate Equivalency Table

	Standard Level 4+ Equivalent Course	**Higher Level 4+ Equivalent Course**
The Arts		
Art History	TR LDT (3 credits)	
Dance	ELEC LDT (3 credits)	ELEC LDT (6 credits)
Film	ENG 110	ENG 110, ENG 1XX
Music	MUS 161	MUS 161, MUS 108
Theater Arts	TR LDT (3 credits)	TR LDT (3 credits)
Visual Arts	TR LDT (3 credits)	TR LDT (6 credits)
Experimental Sciences		
Astronomy	PH 104	
Biology (Score 4)	BI 101	BI 101, BI 102, BI 103
Biology (Score	BI 221Z (p. 133)	BI 221Z (p. 133), BI

5+)		222Z (p. 133), BI 223Z (p. 133)
Chemistry (Score 4)	CH 221Z (p. 140) & CH 227Z (p. 140)	CH 221Z (p. 140) & CH 227Z (p. 140), CH 222Z (p. 140) & CH 228Z (p. 141)
Chemistry (Score 5+)	CH 221Z (p. 140) & CH 227Z (p. 140), CH 222Z (p. 140) & CH 228Z (p. 141)	CH 221Z (p. 140) & CH 227Z (p. 140), CH 222Z (p. 140) & CH 228Z (p. 141), CH 223Z (p. 140) & CH 229Z (p. 141)
Environmental Systems (Score 4)	TR LDT (4)	
Environmental Systems (Score 5+)	GEOG 202	
Marine Science	TR LDT (4 credits)	
Physics (Score 4)	GS 104	GS 104
Physics (Score 5+)	PH 201	PH 201, PH 202, PH 203
Sports, Exercise & Health Science	TR LDT (3 credits)	TR LDT (6 credits)
Individuals and Societies		
Business & Management	BA 101Z (p. 129)	BA 101Z (p. 129), BA 169Z (p. 130)
Economics (Score 4)	TR LDT (3 credits)	TR LDT (6 credits)
Economics (Score 5+)	EC 202Z (p. 151)	EC 201Z (p. 151), EC 202Z (p. 151)
Geography	TR LDT (3 credits)	GEOG 1XX, GEOG 1XX (6 credits)
Global Politics	PS 205	PS 205, TR LDT (6 credits)
History (Score 4)	HST 1XX (3 credits)	HST 1XX (3 credits)
History (Score 5+)	HST 1XX (3 credits)	HST 1XX (8 credits)
History: Africa	N/A	TR LDT (9 credits)
History: Americas	N/A	HST 201, HST 202, HST 203
History: Asia/Oceania	N/A	TR LDT (9 credits)
History: Europe & Middle East	N/A	HST 102, HST 103
History: Medieval Europe & Islamic World	TR LDT (3 credits)	TR LDT (9 credits)
Digital Society	TR LDT (4 credits)	TR LDT (8 credits)
Philosophy (Score 4)	PHL 201	PHL 201
Philosophy (Score 5+)	PHL 201	PHL 201, TR LDT (8 credits)
Psychology	PSY 201Z (p. 205)	PSY 201Z (p. 205), PSY 202Z (p. 205)
Social & Cultural Anthropology	ANTH 110	ANTH 110
World Religions	R 202	
Languages		
Classical Languages	TR LDT (4 credits)	TR LDT (12 credits)
Classical Languages: Latin	TR LDT (4 credits)	TR LDT (12 credits)
Language A: Literature (English)	WR 121Z (p. 215)	WR 121Z (p. 215), ENG 104Z (p. 156), ENG 105Z, ENG 106Z (p. 156)

Language A: Lang & Lit (English)	WR 121Z (p. 215)	WR 121Z (p. 215), ENG 104Z (p. 156), ENG 105Z, ENG 106Z (p. 156)
Language A: Lit (other than English)	TR LDT (4 credits)	TR LDT (12 credits)
Language A: Lang & Lit (other than English)	TR LDT (4 credits)	TR LDT (12 credits)
Language B: Other than English	TR LDT (4 credits)	TR LDT (12 credits)
Literature & Performance (English)	TR LDT (3 credits)	
Literature & Performance (Spanish, French)	TR LDT (4 credits)	
Mathematics & Computer Science		
Computer Science (Score 4)	TR LDT (4 credits)	TR LDT (4 credits)
Computer Science (Score 5+)	TR LDT (4 credits)	TR LDT (4 credits)
Design Technology	TR LDT (4 credits)	TR LDT (4 credits)
Further Mathematics (Score 4)	N/A	MTH 251Z (p. 182), MTH 252Z (p. 182)
Further Mathematics (Score 5+)	N/A	MTH 251Z (p. 182), MTH 252Z (p. 182) , MTH 264, MTH 265
Mathematical Studies	MTH 105Z (p. 181)	
Mathematics	MTH 241	MTH 251Z (p. 182) , MTH LDT (6)

Directory Information

In accordance with the Family Educational Rights and Privacy Act, LBCC considers the following to be directory, therefore public, information: student's name; address; telephone listing; email; major field of study; participation in officially recognized activities and sports; weight and height of sports team members; dates of enrollment; enrollment status; school or division of enrollment; and degrees and awards received. If you do not want the above information released, file a Directory Deletion Form at the Registration Office. Information will not be released without consent except as per Oregon Administrative Rules (for example, in case of federal audit).

Grading System

A	Excellent work; 4 quality points per credit.
B	Above average work; 3 quality points per credit.
C	Average work; 2 quality points per credit.
D	Below average work; 1 quality point per credit.
F	Failing work; 0 quality points per credit.
IN	Incomplete work (not computed in GPA).
P	Pass, C or above, credit earned (not computed in GPA).
W	Withdrawal; no credit earned (not computed in GPA).
NP	No pass; no credit earned (not computed in GPA).
AU	Audit; no credit earned (not computed in GPA).
CMP	Completion of a non-credit course or seminar (not computed in GPA).

Grade Point Average (GPA) is calculated by dividing total quality points by total hours. (Grades not included in GPA are IN, W, P, NP, AU and repeated grades preceded by R or marked exclude on the transcript.) Transcripts show current GPA (one term) and cumulative GPA (all classes taken at LBCC). You can obtain your grades via your WebRunner student account.

Graduation: Standards of Progress

See the Graduation Requirements (p. 256) section of catalog.

Honor Roll

Students who complete 12 credit hours or more of graded LBCC coursework in a term (P/NP grades not be included), and obtain a term grade point average (GPA) of 3.50 or

better (with no incomplete grades) will be placed on the Honor Roll. Students with a disability accommodation, which treats fewer than 12 credits as full-time, may inquire about their eligibility for Honor Roll if their grade point average is 3.50 or higher.

Immunizations

The Oregon College Immunization Law requires community college students born on or after Jan. 1, 1957, who participate in practicum experiences in allied health, education, early childhood education and intercollegiate sports to meet measles immunization requirements (two doses of measles vaccinations) or submit proof of medical/nonmedical exemption.

Incomplete Rule

The incomplete grade (IN) may be issued for non-completion of course work at the discretion of the instructor, according to current guidance. Students have the right to ask for or decline an incomplete grade and instructors have the right to offer/grant incomplete grades. Instructors issuing this grade must submit the Incomplete Grade Contract by the time the incomplete grade is entered.

Incompletes can be requested by the student or offered by the instructor. Whether or not an incomplete grade is granted is at the instructor's discretion. Incompletes are appropriate in situations that meet all of the following criteria:

- The student experiences a serious and unexpected disruptive life event (examples include but are not limited to things like a death in the family, accident, loss of housing, military deployment, etc.) near the end of the term when they can no longer withdraw from the class.
- The student was passing the class at the time of the serious and unexpected disruptive life event.
- The student has only the class's culminating work to complete (example: final paper and/or exam, project presentation, final certification testing, etc.).

Incompletes are generally *not* appropriate in the following situations:

- The student is not passing the class at the time of the serious and unexpected disruptive life event.
- The student has not turned in a significant portion of the coursework.
- The student's situation was foreseeable and avoidable (examples include but are not limited to things like a busy schedule, work, conflict with vacation/travel plans, etc.).
- The student could still withdraw from the class.

Pass/No-Pass Option

Some classes have multiple grade modes associated with them, which may include a designated P/NP option. It is the responsibility of the student to check the class schedule to determine whether a class has a P/NP option. Classes with multiple grade mode options may be updated by the student to their grade mode of choice in their online student account. This can be done through the 7th week of the term. It is not advisable to choose the “P” grade for major coursework within a chosen field of study. If students are planning to transfer to a four-year institution, they should check that institution’s requirements regarding “P” grades. The maximum number of “P” credits allowed toward a degree is 16; excluding those with an obligatory “P” grade.

Records Information

Linn-Benton Community College follows the Federal Health Education and Welfare Guidelines for the Family Educational Rights and Privacy Act of 1974 as amended (Pell-Buckley amendment) and the Oregon Administrative Rules regarding Privacy Rights and Information Reporting in Community Colleges in regard to educational records.

Federal legislation gives students the right to inspect and review their educational records as defined in LBCC Board Policy 7040. If you believe your records contain information that is inaccurate, misleading or in violation of your rights, you may ask the college to amend the record. If the college denies this request, you will be informed of this decision and of your right to a hearing. Further, you may file a complaint with the U.S. Department of Education by contacting the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202.

Repeating a Class

In general, a course in which a student has earned a passing grade may not be repeated to satisfy certificate of degree requirements. Courses that may be repeated to satisfy certificate of degree requirements have a note in the course description.

Courses not designated as repeatable in catalog may only be taken twice. Enrollment in a course after a second

attempt requires approval from the student's academic advisor or CFAR staff.

When a higher grade is earned in a repeated course the lowest grade will be excluded from the cumulative grade point average (CGPA). An “E” is placed on the transcript next to the grade excluded from the CGPA and an “I” next to the grade included in the CGPA calculation.

If the grades for the course are the same, the most recent course is included and the previous class excluded from the CGPA calculation.

Repeated courses are considered attempted credits and count in a student's completion rate for calculating Satisfactory Academic Progress for federal and state financial aid eligibility. The use of federal or state financial aid programs to pay for repeated courses is governed by current regulations. Students are advised to consult with the Financial Aid Office prior to repeating a course.

Use and Disclosure of Social Security Number (SSN)

OAR 589-004-0400 authorizes Linn Benton Community College to request your Social Security number. The number will be used by the college for reporting, research, and record keeping. Your SSN will be provided to the Oregon Community College data reporting system (OCCURS), for state and federal reporting purposes. If taking credit courses, you are required to provide the college with your SSN in order to receive a 1098-T statement for federal educational tax benefits. OCCURS or the college may provide your Social Security number to the following agencies or match it with records from the following systems:

- The National Student Clearinghouse, to track community college students go on with their education at different institutions.
- The Oregon Employment Department helps state and local agencies plan education and training services to help Oregon citizens get the best jobs available.
- The Higher Education Coordinating Commission (HECC), to provide reports to local, state, and federal governments. The information is used to learn about education, training and job market trends for planning, research, and program improvement.
- The Oregon Department of Revenue and the collection agencies only for purposes of processing debts and only if credit is extended to you by the college.
- The Internal Revenue Service for 1098-T reporting.
- The Worker’s Compensation division to track injured worker retraining.

State and federal law protects the privacy of your records. Your SSN will be used only for the purposes above, may not be re-released by these agencies, and must be secured in accordance with federal and state requirements.

Student Consumerism Information

In accordance with 34 CFR Part 668, you have the right to know certain information about LBCC, including a variety of academic information, financial assistance information, institutional information, information on completion or graduation rates, institutional security policies and crime statistics, and financial support data. For details, see https://www.linnbenton.edu/about/policies/srtk.php.

Student Educational Records

Transcripts and Records

Unofficial transcripts can be obtained from your WebRunner student account for free.

Options to order official LBCC transcripts:

Ready within 15 minutes
Go directly to the National Student Clearinghouse (NSC), MyStudentCenter page, or
Log in to WebRunner, click on “Student” menu, click on “Student Records,” select "Order Official Transcript/Verify Enrollment", and click on the National Student Clearinghouse (NSC) link.

Ready within 5-7 business days
Complete the Transcript Request form, sign it, and deliver it one of the following ways:
Email to transcripts@linnbenton.edu
In Person deliver the completed form to Takena Hall on the Albany Campus, or to one of our centers.
By Mail to:
Linn-Benton Community College
Attn: Transcripts
6500 Pacific Blvd. SW
Albany, Oregon 97321

Official transcripts are priced (according to selected delivery method and the number of transcript copies requested) as follows:

- e-Transcripts: Emailed PDF official transcripts, 15 minute processing (fastest delivery method- available only through the National Student Clearinghouse NSC).

- $5.25/copy
- Paper Transcripts: Sent via USPS (take 5-7 days for order processing)
  - $5.00/first copy, $1.00/additional copy
  - Paper Rush orders (guaranteed processing in less than 5 days) are $10.00 for the first copy, $1.00 for each additional copy (ordered at the same time).

Rush orders (guaranteed processing in less than 5 days) are $10 for the first copy, $1 for each additional copy ordered at the same time.

Student Rights, Responsibilities, and Conduct

The college's Board of Education has established policy relating to student rights, freedoms, responsibilities and due process in Board Policy 7030: Student Rights and Responsibilities. AR 7030-01 outlines the rules for student conduct and describes the procedures for due process and for filing a complaint (see Administrative Rule 7030-01: Student Rights, Responsibilities, and Conduct Code). All students should read and know this policy. It sets out expectations for the LBCC Community. To report a concern or complaint, use LBCC's Report a Concern webpage.

Students in an LBCC Degree Partnership Program are held accountable to conduct standards at both institutions. Each institution may intervene in cases of misconduct, particularly in issues involving health and safety. Students are given opportunity for due process; those found in violation of conduct codes may receive sanctions from each institution. Institutions reserve the option to decide that only one institution will process a case of misconduct.

Transferring LBCC Credits

Lower-division credits can be transferred from LBCC to most colleges throughout the United States. If a student is planning to transfer credits to another college or university, they are encouraged to work with an LBCC advisor in planning an appropriate transfer program. It is also recommended that students coordinate their plan with that institution. Information about how to obtain a transcript can be found on the Transcripts page on the linnbenton.edu website.

Withdrawing from School

If a student can no longer attend classes, they should officially withdraw from their classes. Students who drop classes within the refund period may expect a tuition refund. A grade of "W" will not be recorded if the drop is processed before the drop deadline (through the second Monday of the term). A grade of "W' will be recorded for classes withdrawn from after the refund period and before the withdrawal deadline (by the end of the 7th week). (Note: "W" grades are considered non-completion grades for academic standing and financial aid. Also see Refunds and Withdrawal Deadlines in the Schedule of Classes or the Academic Calendar.)

TUITION AND FEES

https://www.linnbenton.edu/future-students/explore-lb/cost/tuition.php

The amount of tuition you pay is determined by your residency and by the number of credit hours you are taking. The chart in this section will help you determine the amount of tuition you owe. You should be aware that some classes charge a fee in addition to tuition and this is listed in the course description within the Schedule of Classes each term. You can check your bill online via your WebRunner student account.

Standard Tuition and Fees Schedule

Classes Taken for Credit

Per credit tuition and fees:

Residency	Credit Tuition	Student Activity and Athletic Fee	Transportation and Safety Fee	Technology Fee	Associated Students of LBCC (ASLBCC) Fee	Total Tuition & Fees
In-state*	$149.80	$6.52	$2.07	$11.08	$2.38	$171.85

Out-of-state	$348.19	$6.52	$2.07	$11.08	$2.38	$370.24
International**	$424.90	$6.52	$2.07	$11.08	$2.38	$446.95

Non-Instructional Fees:

Photo ID Card Replacement: $10

Placement Test (CPT): Varies *(see LBCC Testing Services for current fees)*

Official Copy of LBCC Transcript: $5 for first copy; $1 for each additional copy ordered at the same time.

Unofficial Copy of LBCC Transcript: $5 for first copy; $1 for each additional copy ordered at the same time; free from WebRunner student account.

Faxed transcripts are an additional $1; additional $10 for processing in less than five business days.

Course Materials and Activity Fees (some courses): The cost is listed with each class in the Schedule of Classes.

Tuition and fees are subject to change by the LBCC Board of Education.

*To qualify for in-state tuition rates, you must be a permanent resident of Oregon, California, Idaho, Nevada or Washington. You must pay out-of-state tuition rates if your permanent residence is outside the states of Oregon, California, Idaho, Nevada or Washington. See residency policy for more information.

**You must pay international tuition rates if you are a citizen of another country and require an I-20 to attend college or have another non-immigrant status. International students do not become residents, regardless of the length of their residency within the state.

Additional Tuition:

Certain Career Technical Education (CTE) and lab courses have tuition that is 21% higher than the standard, in-state resident rate. See the Tuition and Fees page on the LBCC website for a full list of programs and courses that have additional tuition.

Certain healthcare programs have a separate cost structure from the regular tuition listed above. Please contact the Healthcare Administrative Assistant for information regarding the cost of these programs at 541-918-8907.

Non-Credit Classes: The cost is listed with each class in the Schedule of Classes.

Residency Policy

Tuition rates and fee schedules differ for students who reside in Oregon, students who do not live within the state or bordering states, and for international students. You pay resident tuition if you have lived in Oregon for at least 90 continuous days immediately preceding the term and can demonstrate your intent to establish a permanent home, or if you have been granted asylum or are a refugee, immigrant, or a permanent resident of California, Idaho, Washington or Nevada. For detailed information and a list of acceptable documents to show proof of residency, see the Residency Form under Registration-related forms at https://www.linnbenton.edu/current-students/registration/index.php.

Student Activity and Program Fee

Student tuition and fees are published at https://www.linnbenton.edu/future-students/explore-lb/cost/tuition.php

Each student is assessed fees for student activities, programming and student governance. Income derived from the fees supports co-curricular activities and programs, including artist and lecturer guest appearances, clubs and organizations, intramurals and a variety of recreational and social activities. More information is available at the Student Life and Leadership Office in the Student Union. Note: These fees are subject to change. OSU Degree Partnership students may pay an LBCC DPP student services fee if not registered for credit classes at LBCC.

Course Materials and Activity Fees

Some courses have additional fees. These fees are indicated in the Schedule of Classes. Fees vary from course to course and may not be refunded if you drop the class.

Student Cost of Attendance

Individual costs vary according to course of study, transportation requirements, housing and other factors. Here are some examples of average costs for nine months (three terms):

Single (At Home)	**Average Cost***
Tuition & Fees	$7,733
Books & Supplies	$1,643
Rent, Utilities & Food	$6,246
Transportation	$2,010
Direct Loan Fees	$84
Personal Expenses	$1,944
	Total $19,660

Single (Away from Home)	**Average Cost***
Tuition & Fees	$7,733
Books & Supplies	$1,643
Rent, Utilities & Food	$12,074
Transportation	$2,010
Direct Loan Fees	$84
Personal Expenses	$1,944
	Total $25,488

*Tuition figures are provided only as rough estimates and are subject to change by the LBCC Board of Education. Current tuition rates may be found in the quarterly schedule of classes or at https://www.linnbenton.edu/future-students/explore-lb/cost/tuition.php. Additional tuition charges are assessed for nonresident and foreign students. Books and supply costs vary greatly.

Tuition Refunds

To receive a tuition refund for credit courses students must formally drop the class between the time of registration and the drop with a refund deadline described below:

1. One-day classes: the day prior to the first day of class;
2. Two-day classes: the day prior to the second day of class;
3. Three-day classes: the day prior to the second day of class;
4. Four- and five-day classes: the day prior to the second day of class;
5. Less than full-term classes that meet for five (5) or more weeks: prior to date by which 20% of class meetings have occurred;
6. Full-term classes: the Monday of the second week of the term.

Definition of a week is Monday 12:00 a.m. through Sunday 11:59 p.m. Refunds will be for 100 percent of the tuition only paid for the class.

For classes cancelled by the college, a full refund will be issued or the student may enroll in another class.

Students on wait lists who have not been registered into the class by the end of the first week of the term will be removed from the wait list and any refund will be credited to their account.

Students dropped by instructors by Involuntary Withdrawal (AR 7035-03) for non-attendance during the refund period will have any eligible refund credited to their account.

Students who are members of the military and ordered to active duty will be allowed to receive a full refund, or a tuition and fees credit for courses that they are unable to complete by their activation date or are ineligible for an incomplete grade [ORS 341.531; ORS 341.532]. Financial aid and other third party educational benefits will be lawfully reassessed based on Department of Education and/or Veterans Administration rules. The student may be required to return some of the aid to LBCC pursuant to state or federal aid rules.

Students may receive full or partial tuition refunds or credit for paid tuition and fees should the college be required to cancel classes as the result of a natural disaster, act of war or terrorism, or a pandemic. The college will decide how and when to reimburse students dependent on the timing, severity, and impact of the event.

General Student Fees

General fees paid by students enrolling in credit classes are refunded in full when a course is dropped within the refund period or when a class is canceled.

Program Fees

Fees charged to students in a program are refunded based on deadlines and procedures established by the program.

Credit Course Fees

Course fees are refunded when a student drops the course before the first day of the course.

Extended Refund Requests for Credit Course Tuition and Fees

Students who experience situations that are serious and compelling may petition for a refund of tuition. General student fees and course fees are not refunded after the refund period. Petitions for an extended refund are reviewed by the Registrar.

Community Education Fees

Course Fees

To receive a course fee refund, students must formally drop the class between the time of registration and the respective deadlines following:

1. Classes meeting 4 weeks or less: the Monday prior to the first day of class.
2. Classes meeting 5 weeks or longer: the Monday of the second week of the class.

Supply Fees

Fees paid for individual lessons or consumable supplies related to the course are non-refundable unless LBCC cancels the course and the student is unable to enroll in the same course.

Extended Refund Requests for Community Education Fees

Requests for an extended refund of Community Education fees after the refund deadline are submitted to the Director of Extended Learning.

FINANCIAL AID AND VETERANS

Financial Aid and Veterans Office

Takena Hall 117, 541-917-4850

Fax: 541-917-4864

faoffice@linnbenton.edu

https://www.linnbenton.edu/current-students/financial-aid/index.php

Linn-Benton Community College (LBCC) makes every effort to ensure that students with financial need have access to its programs and courses. If you have general questions, you may find the answers on the Financial Aid webpage. All students are encouraged to stop by to learn how we can assist them with their educational endeavors.

Students are encouraged to submit their Free Application for Federal Student Aid (FAFSA®) or Oregon Student Aid

Application (ORSAA) as soon as the application becomes available to be considered for maximum eligibility. Applications are typically available on October 1st for the following academic year.

Students who are not eligible to complete the FAFSA® may apply for the ORSAA. The ORSAA is designed for undocumented students to apply for the Oregon Opportunity Grant, Oregon Promise Grant, and certain OSAC scholarships.

Apply for the FAFSA® or ORSAA each year. The federal school code for LBCC is 006938.

Student Eligibility Requirements

Who May Be Considered for Financial Aid?

To comply with general federal eligibility provisions at the College, students must:

- be U.S. citizens or eligible non-citizens with appropriate documentation;
- have a high school diploma, a GED certificate, or complete a home school program at a secondary level;
- not be attended an elementary or secondary school;
- be enrolled in an eligible certificate or degree program at LBCC;
- maintain satisfactory academic progress;
- certify that they are not in default on a federal student loan and that they do not owe money on a federal student grant.

In order to receive aid, students must complete application materials (including FAFSA® or ORSAA) each year, be eligible according to applicable criteria, and be enrolled in and attend credit classes at the College.

Application Procedures

All students who receive federal and state aid at LBCC must be admitted to the college. Refer to the How to Get Started - Admission (p. 218) section of the catalog for information about seeking degrees or certificates.

The Free Application for Federal Student Aid (FAFSA®) at https://studentaid.gov or the Oregon Student Aid Application (ORSAA) at https://oregonstudentaid.gov may be submitted as early as October 1st for the upcoming Summer, Fall, Winter and Spring award year. Students are encouraged to apply as soon as possible because some funding is limited. Students apply on the web at studentaid.gov. A paper FAFSA® is available in a PDF at the same website.

The Financial Aid office can provide additional detailed information about various financial aid processing requirements and programs. For further information, students should:

- Go to the Financial Aid website;
  - Find the Priority Deadline Dates and Disbursement Dates
- Email faoffice@linnbenton.edu;
- Check your WebRunner account;
  - Find outstanding requirements, accept your award offer, and view other messages.
- Come to Takena Hall, Room 117;
- or call 541-917-4850.

Students should include their name and student identification number in all correspondence to the Financial Aid office.

Financial Aid Programs and Sources

What Types of Aid Are Available?

Financial aid is money awarded to students to help them pay for tuition, fees, books, housing and food, supplies, equipment, licensure fees and transportation while they are working on a certificate or degree. There are four types of financial aid programs available: scholarships, grants, loans, and work-study. These funds come from various sources. Program details, including eligibility criteria and dollar amounts, may differ from the following descriptions if applicable laws or regulations governing such programs change after publication of this material.

I. Scholarships

To assist with tuition, books, and other needs, we have a number of scholarships available to both new and current students. Applying is easy! Our online application system allows you to be considered for close to 200 scholarships at once. Contact lbccscholarships@linnbenton.edu or visit the Scholarships webpage for more information.

Linn-Benton Community College Foundation Scholarships

Our scholarships come from donors who have chosen to give to LBCC to help students like you! Donors come from different backgrounds resulting in scholarships for various areas of study. Donors know the juggling act students at LBCC have with school, work, and family. They give to help support students often seeking to help hard working students with a compelling story for financial need. Merit and top grades are not as important to many donors as making your education a top priority and reaching your goals of a degree.

At the LBCC Foundation, we believe every student deserves the opportunity to pursue their dreams, regardless of financial circumstances. We serve as a bridge between aspiring students and their educational goals, providing critical support when it matters most. Through emergency assistance, scholarships, and program support, we help students overcome financial barriers and stay on their path toward success.

To apply for LBCC Foundation scholarships you will need to be currently admitted or enrolled at LBCC as a degree-seeking student with a 2.0 GPA. Some scholarships do require full-time enrollment (12 or more credits). Our scholarships are available for Degree Partnership Program students as long as they are enrolled for a minimum of six credits at LBCC. International students and students without a FAFSA can apply; however, some specific scholarships do require a FAFSA.

Our scholarship system will only allow for you to create an application during an active scholarship cycle. We have two cycles each year: one in the spring and one in the fall. The fall cycle opens on Welcome Day in September. The spring cycle opens during the third week of February. When applying, answer all the questions and take time to prepare the parts with statements.

Students awarded a scholarship are asked to write a thank-you letter addressed to the scholarship donor (the name of the scholarship) and submit it to the LBCC Foundation no later than three weeks into the term upon receiving an award.

Outside Scholarships

For a list of available scholarships and scholarship search engines, visit the LBCC Foundation webpage or contact the Financial Aid office. High school seniors are encouraged to explore scholarship opportunities with the help of their high school counselors.

II. Grants

Grants are awarded on the basis of financial need. Grants do not have to be repaid and are another type of gift aid. Student financial aid offers include grant funds whenever student eligibility and funding levels permit. Funding for the grant programs administered at the College comes from the Department of Education and the state of Oregon.

Federal Pell Grant

The Federal Pell Grant was established to provide financial aid for eligible undergraduate students with financial need. Eligibility for other federal aid is determined after the Pell Grant is taken into consideration. Grant awards in 2024-2025 ranged from $740 to $7,395 annually, depending on financial eligibility and enrollment intensity. Students with a prior bachelor's degree are not eligible. Students may apply for the Pell Grant by completing the FAFSA®.

Federal Supplemental Education Opportunity Grant (FSEOG)

FSEOG awards are federally funded. The College is responsible for selecting eligible students and determining the amount of the award. The FSEOG is for undergraduates with exceptional financial need and gives priority to students who receive Pell Grants. Students must be at least half-time (6 or more credits) per term. Annual FSEOG awards were $1,500 in 2024-2025, depending on federal funding allocations. Students may apply for the FSEOG award by completing the FAFSA®.

Oregon Opportunity Grant (OOG)

The state of Oregon provides funds for this grant program. Eligibility is based on financial need as defined by the Oregon Student Access Commission using the FAFSA® or ORSAA information and is limited to 12 cumulative quarters. Students must have a minimum of one year of legal residency in Oregon and be enrolled in at least six credit hours each term. Students with a prior bachelor’s degree are not eligible. Students enrolled in a course of study leading to a degree in theology, divinity, or religious education are not eligible. Oregon Opportunity Grant awards are set by the state of Oregon. The Oregon Opportunity Grant is not available for Summer term. Annual OOG awards ranged between $1,182 - $4,272 for full time students for 2025-2026 (subject to change). Students may apply for the OOG by completing the FAFSA® or ORSAA.

Oregon Promise Grant

This award provides funding for students who graduated (or the equivalent) from an Oregon high school no more than six months prior to attending and pursuing a certificate or degree at one of Oregon's 17 community colleges. The bill funds at a minimum of $2,058 for each full-time community college student awarded, and it is to be administered by the Office of Student Access and Completion under the Oregon Higher Education Coordinating Commission. Annual Oregon Promise maximum awards for the 2024-2025 year were $4,422 (subject to change for 2025-2026). Students may apply for the Oregon Promise by completing the application at oregonstudentaid.gov and submitting the FAFSA® or ORSAA.

III. Loans

Note: Students are encouraged to borrow only the amount needed to cover essential educational responses. Loan entrance and exit counseling are required for student loan borrowers.

Federal Direct Loan Programs

To be eligible for a federal Direct Loan, students must be enrolled in at least six credit hours and must not be in default on a prior loan or owe a grant repayment. All loans must be repaid. Students must sign a promissory note (a legal agreement to repay) with the Department of Education before any loan money can be disbursed. The promissory note contains detailed information about loan terms, responsibilities, and repayment. Because students must repay educational loans, this kind of assistance is generally referred to as self-help aid. Federal Direct loans are accessed through the normal financial aid process. Please visit the Financial Aid webpage for more information.

Three specific types of Direct Loans are available:

- **Federal Direct Subsidized Loan Program** The Direct Subsidized Loan provides fixed interest (2024-2025 year at 6.53%) federal loans through the Department of Education. A loan origination fee of 1.057% is deducted at the time of disbursement. Maximum annual loan limits are based on financial need but cannot exceed $3,500 for freshmen and students in certificate programs and $4,500 for sophomores. Loan repayment begins six months after a student ceases to be enrolled at least half time. Monthly payment amount and length of repayment depend on the cumulative amount borrowed but will be set up with an initial 10-year repayment.
- **Federal Direct Unsubsidized Loan Program** The Direct Unsubsidized Loan provides fixed interest (2024-2025 year at 6.53%) loans through the Department of Education. A loan origination fee of 1.057% is deducted at the time of disbursement. The Direct Unsubsidized Loan is available to students who do not qualify for some or all of the need-based Direct Subsidized Loan. Dependent students as defined by the Department of Education are eligible to borrow up to $2,000 in Direct Unsubsidized Loans and independent students, up to an additional $6,000. Student borrowers will be responsible for payment of the interest that accrues on these loans while they are in school and during periods of deferment. Loan repayment begins six months after a student ceases to be enrolled at least half time. Monthly payment amount and length of repayment depend on the cumulative amount borrowed, but will be set up with an initial 10-year repayment.
- **Federal Direct PLUS Loan** The Direct PLUS Loan is a non-need based loan to parents. Loans may range up to the published cost of attendance for the institution minus other student aid. A loan origination fee of 4.228% is deducted at the time of disbursement. The annual fixed interest rate for the 2024-2025 year was 9.08%. Parent borrowers will be evaluated for adverse credit history. For more information on the Direct PLUS Loan, visit studentaid.gov.

Federal Direct Loan Academic Year Limit

	Dependent Student			Independent Student		
Credits Completed	Maximum Subsidized Loan	Additional Unsubsidized Loan	Maximum Total Loan	Maximum Subsidized Loan	Additional Unsubsidized Loan	Maximum Total Loan
0-44	$3,500	$2,000	$5,500	$3,500	$6,000	$9,500
45+	$4,500	$2,000	$6,500	$4,500	$6,000	$10,500

IV. Work-Study and Student Employment

Many students help finance their education by securing part-time employment either on or off campus. Since students work in order to receive funds from employment, this kind of assistance is considered a form of self-help aid.

The LBCC Student Employment office maintains a list of job opportunities for students seeking employment.

Federal Work-Study (FWS)

This program provides employment opportunities to students who apply for financial aid and are eligible for the Federal Work-Study program. Availability is based on federal fund limits. In addition to providing income, students may acquire work experience in jobs related to their academic interests. Annual FWS awards were $4,800 in 2024-2025.

Students can apply for a Work-Study position after they receive a financial aid award offer. To get started, visit the LBCC Student Employment website and apply for a campus job. Students will not receive any Work-Study funds until they are actually hired and working in a Work-Study job. Due to the need to match job requirements with student skills, the College cannot guarantee employment to all eligible FWS recipients.

Work-Study jobs provide experience in a variety of fields including physical education, the sciences, health service, and office work. Community service jobs are also available.

Program Eligibility Requirements

A student must be enrolled as a *regular student* in an eligible program to receive Federal Student Aid funds. Eligible programs need to be at least one year in length (some exceptions apply) and must lead to the completion of a degree or certificate.

Accelerated Certificate Training Programs at LBCC

LBCC offers one short-term training program that is approved by the U.S. Department of Education, Phlebotomy. Students may be eligible to participate in the Pell Grant, Supplemental Education Opportunity Grant (SEOG), and Direct Loan programs. Annual grant and loan limits are prorated based on the length of the programs. The accelerated certificate training programs are not eligible for the Oregon Opportunity Grant, Oregon Promise Grant, or Federal Work-Study.

Disbursement Policy

How Student Aid is Distributed

Financial Aid is based on Degree-Approved Courses you are registered for at midnight on the census date. The census date is the point at which enrollment is locked for financial aid purposes. Each term, a census is taken at the end of the last day a student can drop classes for a full refund. Our census date is the Monday of the second week of each term, unless Monday is a holiday and then the census date will move to the Tuesday of the second week of the term.

Aid is first applied to tuition, fees, and other authorized charges. Any remaining funds are then refunded to the student by the Business Office. Work-Study earnings are disbursed monthly through the College's regular payroll process.

Satisfactory Academic Progress (SAP) Policy

To maintain eligibility for financial aid, a student must comply with Federal regulations 34 CFR 668.34, the Satisfactory Academic Progress policy. Failure to meet any of the standard requirements may result in the denial of federal financial aid at the College. A copy of the Financial Aid Satisfactory Academic Progress policy is available at the Financial Aid Office and on our Financial Aid webpage under Satisfactory Academic Progress.

Satisfactory academic progress is defined as passing 70% of the required number of hours (pace), and achieving a required cumulative grade point average (GPA) of 2.0 during 150 percent (approximately 135 credits for a two-year degree and 75 for a one-year certificate) of a student's program (maximum time frame). Your academic records are reviewed at the end of each term in which you are enrolled to determine compliance. Federal regulations require that your entire academic history be considered, even if you have never received financial aid. State and non-federal programs and scholarships may have different standards for evaluating satisfactory academic progress.

You are notified of your SAP standing after SAP is calculated. This includes good standing, warning, termination, and probation. You are sent a courtesy notification if you are close to being below GPA and pace. All communications are sent to your LBCC email. If you fail to meet SAP requirements due to extenuating circumstances, you may appeal to the Financial Aid Appeal Committee.

Reinstatement of Aid Eligibility

A student may submit an appeal for reinstatement on the basis of mitigating circumstances or after successfully rehabilitating the cumulative 2.0 GPA or better and completion rate of 70%.

Appeal Procedures

Appeals are made through the Office of Financial Aid utilizing the official appeal form located within Webrunner and require the following: an explanation and documentation regarding why the student failed to make satisfactory academic progress (SAP) and a statement and documentation as to what has changed in the student's situation that would allow the student to meet SAP in future terms. Appeals are referred to the Financial Aid Appeals (FAAC) committee. If an appeal is approved, aid eligibility will be restored beginning with the current term and not retroactively. More information regarding the appeal process and deadlines can be found on our website.

Withdrawal Penalty/Repayment Requirements

The U.S. Department of Education regulations require that recipients of federal financial aid "earn" their aid by consistently attending and participating in class. To keep all of their financial aid funds, students must complete at least 60%of the term.

If a student withdraws from all courses after receiving federal funds or stops attending classes before reaching the 60% point, they may be obligated to repay some or all of the aid that was awarded to them.

It's important to note that if financial aid covered tuition and fees, and a student is granted a 100% refund of tuition, that refund will be returned to the account that originally paid the tuition and fees.

When students completely withdraw from their courses, they can request an estimated Title IV refund and repayment calculation from the Financial Aid office.

Warning! If you receive federal and/or state aid based on false information, you will be required to repay all of the aid you received. If you purposely give false or misleading information on any documents used to determine your financial aid eligibility, you may be fined, sent to prison, or both.

VETERANS EDUCATION BENEFITS

Veterans Office

Takena Hall 117, 541-917-4858

vetsoffice@linnbenton.edu

The Veterans Benefits Specialist is the VA School Certifying Official for LBCC, assisting student Veterans, current military service personnel, and eligible dependents with VA Education Benefits. The Veterans Benefits Specialist reports enrollment information, academic progress and graduation to the VA. Academic advising, counseling, and other resource referrals for Veterans are available. The type and eligibility of educational benefits can vary, please see the Veterans Benefits Specialist for more information or visit the VA website at www.vets.gov/education. Contact information and office hours can be found on the LBCC Veterans Office webpage.

If you would like more information about Veterans & Dependents Education Benefits, you can contact the LBCC Veterans Benefits Office by phone, email, or stop by the office during open counter hours.

Johnny Isakason and David P. Roe, M.D. Veterans Health Care and Benefits Improvement Act of 2020

The following individuals shall be charged a rate of tuition not to exceed the in-state rate for tuition and fees purposes:

- A Veteran using educational assistance under either Chapter 30 (Montgomery Bill® - Active Duty Program) or Chapter 33 (Post 9/11 G.I. Bill®), of title 38, United States Code, who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence).
- A Veteran using Chapter 31 (Vocational Rehabilitation and Employment (VR&E) Benefits), of title 38, United States Code, who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence).
- Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence).
- Anyone using transferred Post 9/11 G.I. Bill® benefits (38 U.S.C. § 3319) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence).
- Anyone using transferred Post-9/11 G.I. Bill® benefits (38 U.S.C. § 3319) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty.
- Anyone using educational assistance under Chapter 35 (Survivors & Dependents) of title 38, United States Code, who lives in Oregon while attending school in Oregon (regardless of his/her formal state of residence).
- The policy shall be read to be amended as necessary to be compliant with the requirements of 38 U.S.C. 3679(c) as amended.
- In compliance with the Veterans Benefits Transition Act of 2018, 38 U.S.C. 3679(e), any individual covered by VA Benefits using Chapter 33 (Post 9/11 G.I. Bill®) or Chapter 31 (VR&E) who provides a "certificate of eligibility," "Statement of Benefits" or authorization using VAF 28-1905 is permitted to attend courses during the period beginning on the date when the individual provides this information to the Veterans Office and ending on the earlier of the following dates:

1. The date on which payment from the VA is made to the institution
2. 90 days after the date the institution certified tuition and fees following the receipt of the certificate of eligibility

Further, no penalty (including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds) will be imposed because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement of funding from VA under Chapter 31 or 33.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the U.S. government Web site at http://www.benefits.va.gov/gibill.

LBCC's Commitment to Military Connected Students

LBCC supports Spouses and Dependents of Veterans by certifying Chapter 35 (Survivors' and Dependents') through the VA.

LBCC complies with Oregon's ORS 350.285 waiver of tuition for family members of deceased or disabled veterans or children of Purple Heart recipients.

Students must meet qualifying criteria as determined by the State of Oregon including:

- An Oregon Resident at the time of application
- Dependent 23 years old or younger at the time of initial application or Spouse of Veteran rated at 100% Disability through the VA
- Fully admitted student and enrolled in a Certificate program or Associate's Degree
- Student must maintain Satisfactory Academic Progress standards
- NOT receiving the marine Gunnery Sergeant John David Fry Scholarship

Students must provide the following documentation in order to receive the State of Oregon tuition waiver:

- VA Certified death certificate of service member, or
- VA letter stating Veteran's disability rating, or
- Veteran's DD 214 that states receipt of Purple Heart in 2001 or thereafter

Please note the following restrictions mandated by the State of Oregon regarding tuition waivers:

- Tuition waived only for courses that may lead to a degree
- Waiver covers tuition charges but does not cover course fees
- The State of Oregon tuition waiver is a last dollar paid waiver and the amount of the waiver will be reduced by the amount of federal aid scholarships or grants, awards from the Oregon Opportunity Grant program, or any other aid from LBCC received

Tuition Waiver Applications are available on the Veterans Office website.

LBCC's Commitment to Service Members

LBCC complies with the Department of Defense Memorandum of Understanding (MOU), demonstrating that we follow DoD guidelines. What that means:

- LBCC maintains accreditation by the Northwest Commission on Colleges and Universities and complies with Federal and State regulations
- LBCC has established the Veterans Benefits Office, which can provide students with information and refer students to services:
    - Information about our programs and access to professionals to help with course planning
    - Information about cost and funding options, including access to Financial Aid professionals who can assist students in learning about federal or private options
    - LBCC discloses its Cohort Default Rate
- LBCC has a readmission policy that allows Service members to readmit to the college in the same status they left if the reason for leaving was because they were called to active duty in accordance with 34 CFR 668.18.

LBCC ensures that members of the Armed Forces, including the reserve components and the National Guard, who enroll in a course of education are accommodated during short absences by reason of serving in the Armed Forces in accordance with 38 U.S.C. 3679(g) as amended.

- LBCC does not practice aggressive recruiting of any students, including Service members or Veterans.
- LBCC does not incentivize any employee based on enrolling students in school or receiving federal aid.
- LBCC is honored to welcome Service Members and Veterans and provides these services in addition to a Veterans Resource Center located on the Albany Campus in the Industrial Arts Building A, Room IA-232. If you have questions about what is available at LBCC, please contact our Veterans Benefits Specialist.

To Apply for Veterans Educational Benefits Through the VA

- Submit an online application at: https://www.va.gov/education/how-to-apply/

- The online application process will walk students through a series of questions to help determine eligibility.
- It may take between 3-4 weeks for the VA to process an application.
- You will receive either an approval or denial letter from the VA. The VA makes the determination about your percentage of entitlement and length of time.
- If approved, you will receive a Certificate of Eligibility (COE). You will need to submit your (COE) and DD 214 as well as complete LBCC's VA and Military Benefits Entrance form prior to receiving benefits at LBCC.

Student Responsibilities

- Complete the admission process for LBCC.
- Bring your VA Certificate of Eligibility and DD 214 to the LBCC Veterans Benefits Office to begin receiving benefits.
- Complete and submit the LBCC VA and Military Benefits form to get your file started. Forms are available online or at the LBCC Veterans Benefits Office.
- Submit all transcripts from previous schools and military service.
- *Any Veteran receiving GI Bill® benefits while attending LBCC is required to obtain official transcripts from all previously attended schools and submit them to the school for review of prior credit.*
- Submit the Enrollment Verification Form every term. This form lists the classes the student is claiming for Educational Benefits. This form can be submitted via the online form, by email, or in person at the LBCC Veterans Benefits Office as soon as the student is registered for classes.
- A new form should be submitted if there are any changes to the student's schedule.
- Student's must be in a VA Approved degree program and must match what they have declared with the college.
- Students attending another institution and using VA benefits who want to use these benefits at LBCC must have their parent school provide a Parent School Letter prior to certification of courses.

LBCC Veterans Office Responsibilities

- Verify that the classes the student is enrolled in apply to the completion of their declared degree program.
- Submit the student's enrollment certification to the VA.
- Notify the student when the classes they are enrolled in are ineligible to be certified.
- Report dropped classes and failing grades to the VA.
- Follow the Satisfactory Academic Policy standards established by LBCC Veterans Office.
- Notify and report students on Veterans Academic Probation and Suspension who fall below LBCC Academic Standards.

Transfer of Credit

All Veterans and eligible dependents receiving GI Bill® benefits while attending Linn-Benton Community College are required to obtain transcripts from all previously attended schools and submit them to the LBCC Admissions Office for review of prior credit, including military transcripts.

Credit for Military Service and Education

Military Transcripts for Army, Navy, Marine, and Coast Guard can be requested through the JST System. The Joint Services Transcript (JST) site allows Veterans to access their military transcripts and have them electronically sent to the school of their choice.

JST Transcripts can be requested at: jst.doded.mil

Air Force transcripts can be requested through the Air University:
https://www.airuniversity.af.edu/Barnes/CCAF/Display/Article/803247/community-college-of-the-air-force-transcripts/

Veterans will be awarded three PE 185 Activity credits for submitting their military transcripts or their DD 214 Member-4 form with Character of Service.

Military transcripts or DD 214 copies can be submitted to either the LBCC Veterans Office or the Transcript Office.

Satisfactory Academic Standards and Progress for Veterans Benefits

The law requires that educational assistance benefits for Veterans and other eligible persons be discontinued when the student ceases to make satisfactory progress toward completion of their training objective.

The Veterans Benefits Office will evaluate the student's classes each term to verify they apply toward the completion of the student's declared program. Any classes that do not qualify toward the completion of a degree will not be certified with the VA and will be the student's responsibility to cover those tuition expenses.

Any courses receiving a punitive grade due to the student not completing the course must be reported to the VA, which may result in charges due to overpayment of benefits.

Veterans Benefits Warning & Probation

At the end of each term, the student Veteran's grades will be evaluated. Those students who fall below a 2.0 GPA or the 70% completion rate will be placed in Warning status. Students will be notified by email. This warning does not affect benefits for the next term. Students have the following term to clear the Warning and move back into good standing or drop down into Probation Status. To clear Academic Probation, the student veteran must complete 100% of their enrolled classes with a 2.0 GPA or better.

Suspension of Veteran Benefits

A student Veteran on Academic Probation who does not succeed the following term is placed in Suspension of Veteran Benefits Status and will be notified by email. Veterans have the option to complete the appeal process but they will not be certified to receive benefits until it is approved. If the appeal is not approved or the student has already received an appeal before, they will need to complete a term on their own. After a successful term without benefits, they may request an evaluation to be reinstated.

STUDENT AFFAIRS-ACADEMIC SUPPORT

Accessibility Resources

Red Cedar Hall 105, 541-917-4789

https://www.linnbenton.edu/current-students/accommodations/index.php

Accessibility Resources provides accommodations for eligible LBCC students and event guests. The department offers support with accommodations, planning, and advocacy. Students are responsible for contacting Accessibility Resources to initiate the interactive process of determining accommodations.

For more information and to apply for services, visit https://www.linnbenton.edu/accessibility-resources.

For assistance with any disability-related inquiry, call 541-917-4789 or email accessibility@linnbenton.edu. Hearing and speech-impaired individuals can use the Oregon Telecommunication Relay Service at 1-800-735-2900.

Admissions

Takena Hall - 118, 541-917-4811, admissions@linnbenton.edu

https://www.linnbenton.edu/future-students/join-lb/index.php

The First Resort in Takena Hall provides a central location for obtaining LBCC information, referral, and directions. Staff are available to help increase student awareness of and access to information about starting college and applying for admissions.

Advising

https://www.linnbenton.edu/current-students/advising/index.php

Academic advisors assist students in developing an education plan which takes into account the student's career goals and major. Students are expected to meet with their advisor each term and whenever they have questions. Students play an important role in forming a productive relationship with their academic advisor and are expected to schedule appointments ahead of time and come prepared to the appointment. Newly admitted students are assigned a specific advisor, based on their declared major. Students who have not yet decided on a specific major are assigned an advisor for career exploration and career development and life planning. Students with an assigned advisor will find the name of their advisor in their WebRunner account, once the first term begins. Students who need help identifying their advisor may inquire at the Advising Center, Takena Hall.

Advising Center -- Career and Student Employment Services

Takena Hall 101, 541-917-4780

https://www.linnbenton.edu/current-students/advising/index.php

The primary goal of Career and Employment Services is to teach and support students in the processes of preparing for and obtaining a career position that improves quality of life upon college graduation/completion. Career and Academics Support Specialists offer a range of student experiences designed to help students prepare for workplace success, including career assessments, career exploration, experiences to develop workplace and employability skills, and job search techniques. Detailed information about services provided can be found on the Advising Center webpage.

Advising Center -- Counseling Services

Takena Hall 101, 541-917-4780

https://www.linnbenton.edu/current-students/advising/index.php

The primary goals of Personal Health & Well-Being Services in the Advising Center are to provide opportunities for students to clarify and attain their educational and career goals and to promote student well-being equitably for all students. Detailed information about services provided can be found on the Advising Center webpage.

Student Success Options in Mathematics

LBCC has designed the following courses to refresh skills prior to taking a course or accelerate students to the appropriate transfer-level mathematics course. Students should check with their academic advisor when making a decision about an appropriate mathematics pathway.

MTH 105Q (p. 181) **Math in Society Support** is a corequisite to MTH 105Z that provides just in time support for students who do not place directly into MTH 105Z. Focuses on the foundational skills and concepts needed to be persistent and successful in MTH 105Z Math in Society. Provides students with appropriate support as

needed in arithmetic, algebra, problem solving, technology, and study skills in an interactive setting and allows students in a non-stem pathway to complete their college level math requirement in one term.

MTH 111Q (p. 181) **Precalculus I: Functions Support** is a corequisite to MTH 111Z that provides just in time support for students who do not place directly into MTH 111Z. Focuses on the foundational skills and concepts needed to be persistent and successful in MTH 111Z Precalculus I: Functions. Provides students with appropriate support as needed in algebra, problem solving, technology, and study skills in an interactive setting and allows students in a stem pathway to complete their college level math requirement in one term.

MTH 015 Math Prep Lab is a 10-week, two-credit course for students who have perhaps been out of school a while and forgotten some math skills. Students in Math Prep Lab work at a faster pace than in other courses, with the goal of increasing their math placement by more than one class in a single term. To be successful in Math Prep Lab, a student must be motivated and must have ample time outside of class dedicated to working on the material. Students and their instructor will determine a timeline for completing work. Math Prep Lab is taught using online software to relearn forgotten math skills.

MTH 098 Foundations for Contemporary Math is a 10-week, five-credit course that is an alternate path to MTH 105Z, a transfer-level mathematics course. For students pursuing a degree whose mathematics requirement can be satisfied by MTH 105Z, this pathway (MTH 098) will prepare you for success in MTH 105Z in just one term. Students on this pathway take MTH 098 instead of the traditional algebra sequence. This course, therefore, is only for those students who do not need MTH 111Z, or any class for which MTH 111Z is a prerequisite, in their degree plans. Students should check with their academic advisor about taking advantage of this alternate path. Please note:

- MTH 098 is NOT for students who need to take MTH 111Z.
- Students taking MTH 098 should sign up for MTH 105Z for the following term.
- MTH 098 is a 5-credit course that requires active participation from every student.
- Excel and computer access will be needed throughout.
- The student should have taken algebra in high school.
- Forgotten math skills will be recovered when needed, so there is no prerequisite.
  See the LBCC Testing Services webpage for more information regarding your placement and course options.

Student ID Card

Admissions, Takena Hall - 118, Monday – Friday

You will need an LBCC student photo identification card to use many of LBCC's services, including the Library, the Business Office, Student Testing, Learning Center and Bookstore. LBCC Student IDs are available as a physical card and as a virtual card that can be displayed on a smartphone. A student ID card allows you free rides on public transportation and entitles you to discounts on certain merchandise or services in the community. You must be a registered student in order to obtain an ID card. The first ID card is provided free of charge; replacement cards cost $10.

Testing Services

RCH-111, 541-917-4781

https://www.linnbenton.edu/current-students/testing/index.php

Testing Services offers a variety of tests for students and community members. They include:

- LBCC class proctoring and accommodation testing
- General Education Development (GED®) test for the certificate of high school equivalency
- College Level Exam Program (CLEP) test for college credit by examination
- Course challenges that enable students to earn college credit by examination without completing regular credit coursework
- Proctored exams
- Authorized Pearson VUE Test Center

STUDENT SERVICES-STUDENT SUPPORT

Corvallis Campus

Benton Center:

757 Polk Street, Corvallis, 97330

541-757-8944

Chinook Hall:

931 Reiman Street, Corvallis, 97330

541-918-8900

The Corvallis Campus, comprising the Benton Center and Chinook Hall provides LBCC's quality education directly to Benton County residents. Conveniently located in the heart of Corvallis, the Corvallis Campus offers a wide range of programs that include:

- Lower division transfer classes
- English Language Acquisition
- Testing and Learning Center
- Small Business Development Center, Corporate Training, Customized Training, and Commercial Drivers License Training.
- Noncredit lifelong learning classes for all Benton County residents through Community Education in art, fitness, foreign languages,computer training, driver education, and more
- A preschool cooperative and parenting classes
- Event and meeting space

The Corvallis Campus offers credit courses necessary for transfer to Oregon State University and other four-year colleges. LBCC and OSU students can take classes at either institution (or both) through our Degree Partnership program. A current schedule of Corvallis Campus classes can be found in the online Schedule of Classes.

The Corvallis Campus supports its students with services including advising, testing, registration, instructional assistance in mathematics and writing, and Campus Store order pick-up.

Lebanon Campus

Advanced Transportation and Technology Center:

2000 W Oak St, Lebanon 97355

541-917-4506

Healthcare Occupations Center:

300 Mullins Dr, Lebanon, 97355

541-918-8907

The Lebanon Campus provides educational programs directly to East Linn County residents. The campus provides a comfortable, welcoming environment for first-time students and those returning to college. Among the programs offered are:

- CPR and First Aid classes
- Certified Medical Assistant, Dental Assistant, Diagnostic Imaging, Medical Coding & Reimbursement, Nursing, Occupational Therapy Assistant, Phlebotomy, Surgical Technician
- Automotive and Electric Vehicle maintenance and repair
- Heavy Equipment/Diesel maintenance and repair
- Noncredit lifelong learning classes for all Linn County residents through Community Education

A current schedule of Lebanon Campus classes can be found in the online Schedule of Classes.

Campus Store

Calapooia Center 114, 541-917-4950

orders@linnbenton.edu

bookstore.linnbenton.edu

The LBCC Campus Store carries course materials and supplemental materials for classes taken on all campuses. The bookstore also offers school supplies, gifts, LBCC gear, electronics, and convenience store merchandise. SNAP benefits are accepted where applicable. Hours of operation are 8:00 a.m. to 4:00 p.m., Monday through Thursday, 8:00 a.m. to 2:00 p.m. Friday at our Albany main campus location. Visit our website for online ordering, book buyback information, store closure dates, extended hours, store events and more. Course materials

and supplemental materials for classes offered at the Corvallis Campus and Lebanon Campus are also available at the Campus Store or online, with convenient pickup at the center locations. Shipping direct to home is also available.

Campus Public Safety

Office of Safety & Loss Prevention
Vacant Position, Director

541-917-4940

Public Safety Department:
Willamette Hall 110

541-917-4440 (Office Hours)

541-926-6855 (Albany officer on duty)

541-936-0631 (Lebanon officer on duty)

541-936-0456 (Corvallis officer on duty)

security@linnbenton.edu

https://www.linnbenton.edu/about/safety/index.php

The Public Safety Office is open Monday through Friday, 8:00 a.m. to 5:00 p.m. Public Safety Officers can be reached 24 hours a day by calling 541-926-6855, or using a designated Campus Safety phone. Dial 411 if calling direct from campus networked phones. The Office of Safety & Loss Prevention, of which Public Safety is a part, provides emergency planning; monitors LBCC compliance with OSHA, DEQ, and Clery Act requirements; patrols campus facilities and parking lots; houses LBCC Lost and Found services; maintains LBCC property, casualty, and liability insurance coverage; provides medical and emergency response; maintains control of building access; provides video surveillance of most facilities; and other safety-related services as referenced at https://www.linnbenton.edu/about/safety/index.php.

Child Care - Periwinkle Child Development Center

LBCC is excited to offer toddler and preschool classes at Periwinkle Child Development Center, located on the LBCC Albany campus. The center serves children ages 2-5 years old. The center serves children with IFSPs, families on ERDC funding, offer no-cost Preschool Promise slots, and offer scholarships to reduce tuition costs to student parents. More information on programs and services can be found at https://www.periwinklecdc.com, or by calling 541-917-4480.

This center also serves as a lab school for students studying Early Childhood Education to do observations, teaching experiences and practicum hours. Other disciplines/fields may also utilize the center for these purposes as well.

Child Care – Family Connections

Luckiamute Center 132

541-917-4884, 1-800-845-1363; connect@linnbenton.edu

https://www.linnbenton.edu/community/family-resources/child-care.php

If you need child care, are having difficulty with your current child care arrangement, or want to ask questions of a child care specialist, call or stop by Family Connections, Luckiamute Center. Family Connections staff can also help with referrals to parenting education, recreation, or other family support programs in the community.

Computer Labs

All LBCC students and staff are eligible to use the student computer labs for course-related learning and research. Computer labs are available on the LBCC Albany campus, as well as the campuses in Corvallis and Lebanon. The labs are open various times. For lab locations, hours, hardware and a list of software available, call 541-917-4333.

The Learning Center: Albany Campus

Willamette Hall 200, 541-917-4684

https://www.linnbenton.edu/current-students/learning-center/index.php

The Learning Center contributes to student engagement and success by providing free services that improve students' academic thinking, writing, and learning skills. Professional staff and tutors provide the "insider knowledge" new students need to thrive at the college level, overcome learning challenges, and achieve excellence in their chosen programs. The Learning Center space offers an informal learning environment with great lighting, open study areas for group collaboration, reservable study rooms, portable whiteboards plus day use lockers, computers, and office supplies that busy commuter students value in an on-campus study space.

Services include:

Math Assistance The Math Desk provides a supportive place where students can get help with all LBCC mathematics and applied mathematics courses. Friendly staff use a variety of strategies to address each student's learning needs. At the drop-in Math Desk, staff answer computational questions, explain course technology and clarify thinking about math assignments. A remote drop-in option for just-in-time help without needing to come to campus is also available.

The Math Cafe offers an informal environment with comfortable seating, free hot beverages, and laptops for students enrolled in Math 15, 75, 95 and 98. Math success coaching is offered, both in-person and remotely, by appointment using Tutortrac. Students can discuss math study strategies and how to use and navigate ALEKS software.

Writing Assistance In a warm and welcoming environment, the Writing Center staff assists students with writing assignments from any class and at any stage of the writing process. Students can drop in to the space downstairs in the library, make a 30-minute appointment either remotely or in-person, or submit their work online through the Online Writing Lab (OWL) available through the Writing Center's website. Written responses are provided within 48-72 hours.

Computer Access Students may use drop in computers located in the open study areas for coursework. Wireless Internet access is provided throughout the facility.

Academic Skills Coaching Academic coaching helps students overcome barriers to their success, working with students to identify goals and develop an academic plan to promote their success, including improving specific academic or communication skills. Appointments are available both in-person and remotely.

Student Work Area A coin-operated copy machine, pay-for-print service, and other office supplies are available.

Tutoring Students are eligible for free tutoring appointments in many credit and GED courses, both in-person and online. Students may schedule tutoring sessions online 24 hours in advance through MyLB SSO. If interested in same day tutoring appointments, or within 24 hours, students may visit the Information Desk at the Albany Campus Learning Center, or email learningcenterinfo@linnbenton.edu. In addition, the Tutoring Program offers Group and Drop-in Tutoring when there is sufficient interest. For more information, please visit the Tutoring Center webpage: https://www.linnbenton.edu/current-students/learning-center/tutoring/index.php.

Library

Albany Campus, Willamette Hall • https://www.linnbenton.edu/current-students/library/index.php

Circulation: 541-917-4638

Reference: 541-917-4645 / libref@linnbenton.edu

Student Help Desk: 541-917-4630 / student.helpdesk@linnbenton.edu

Healthcare Occupations Center Library: 541-918-8840

Department Chair: 541-917-4655

The LBCC Library provides resources and services for the instructional, research, and general information needs of students, faculty, staff, and local residents. The Library provides comfortable open space for collaborative work, including study rooms and a beautiful reading room. The Library provides computer workstations and laptops for checkout. The Library offers weekend and evening hours.

Located in Willamette Hall on the main Albany campus, the Library collection integrates a large collection of books, reserve textbooks, and multimedia items. Materials not held in the Library's collection may be obtained for LBCC students, faculty, and staff at no charge through interlibrary loan. Our many databases help you locate scholarly journal articles, electronic books, videos, and other sources. Off campus access to these databases is available to LBCC students, faculty, and staff. Librarians are available to provide research help at the reference desk, at individual consultations(both in-person and remote), and during library workshops.

The Student Help Desk, located in the Library, provides both in-person and remote assistance with student computing and technical needs, including e-learning (Canvas), student email accounts, printing, and common software.

The Library maintains a separate facility at LBCC's Healthcare Occupations Center in Lebanon with research assistance, book and database access, and technical support available during open hours.

Lost and Found

See Campus Safety (p. 251)

Department of Institutional Equity, Diversity, and Inclusion

Forum 220, 541-917-4461

https://www.linnbenton.edu/current-students/iedi/index.php

LBCC emphasizes the establishment of a welcoming institutional environment that acknowledges fairness and individual distinctiveness across the academic community. Our campus spaces function as an accessible venue where students, employees, and community members may participate in programmatic offerings, engage in scholarly discourse, and explore concepts related to representation, belonging, and collective unity within the institutional framework.

Parking

Willamette Hall 110, 541-917-4440

Parking for students, staff and visitors is free and available on a first come, first-served basis. Some parking areas are designated for specific use and are not available for general parking - loading zones, emergency/fire lanes, disabled parking, facility vehicle parking, Public Safety vehicle parking, etc. Unauthorized overnight parking is prohibited. Parking permits are available at no charge from the Campus Public Safety Office; permits are highly recommended.

Parking and traffic rule details are available on the Campus Public Safety website, https://www.linnbenton.edu/about/safety/index.php. All state and local laws governing movement, operation, and parking of vehicles shall apply on college property. Parking regulations have been approved by the LBCC Board of Education and are strictly enforced 24 hours a day in accordance with college policy and ORS 341.300. Improperly parked vehicles are subject to a fine. Overnight parking is not allowed without prior authorization and vehicles parked for an extended period of time are subject to towing at the owner's expense.

It is required that individuals obtain an Oregon Department of Motor Vehicle Disabled Permit if continued use of a disabled space is needed.

Publications

LBCC students publish a monthly magazine and online news site, The Commuter (lbcommuter.com), which has won numerous awards for excellence in reporting, writing, photography, design, and advertising. If you are interested in participating, contact the newspaper staff in The Commuter Office on the second floor of the Forum building room F-222, or contact The Commuter advisor and Journalism instructor- Rob Priewe.

Resources for Families

These departments/programs offer information and assistance to parents interested in helping their children develop into healthy adults. Classes for parents, child care providers and educators are offered each term.

Pollywog

The Pollywog Project assists students, staff, and the community with personalized consultations and referrals to child care, preschools, community resources and activities for children and families. Both phone and walk-in visits available in Luckiamute Center room 132.

Family Connections

Family Connections offers a variety of classes and short term training for early educators and child care programs. These classes are designed to assist child care providers in meeting state training requirements, to participate in the Oregon Registry, to aid in program improvement, or to enroll in LBCC's certificate or degree programs through the Early Childhood Education program.

Parenting Education

The Parenting Education Department promotes the development of knowledge and skills for strong families through classes and workshops. Programs are offered throughout Linn and Benton counties and serve parents and other primary caregivers and professionals working with parents.

Parent/Child Classes The Live & Learn program offers parent-child classes for parents/caregivers with newborns through preschoolers. Each class is offered by the age level of the young child. Parents/caregivers learn best practice techniques for supporting their child's amazing development and growth through developmentally appropriate songs, games, and activities. Meet other parents/caregivers and children withing the community.

Parenting Classes A wide variety of classes and workshops are offered in partnership with schools and community organizations in Linn and Benton counties. Classes are designed to enhance parent-child relationships, strengthen parenting skills and resilience, and prevent and correct problem behaviors in children.

Parenting Educator Training The Parenting Education Department offers training for professionals working with parents in a parenting educator role.

Parenting Success Network

The Parenting Education Department facilitates the Parenting Success Network, a coalition of organizations in Linn and Benton counties dedicated to strengthening and supporting families. The coalition seeks to promote positive parenting practices, normalize parenting education, build a coordinated system of parenting education and improve the access to and quality of all parenting education opportunities. The Parenting Success Network is a Hub of the Oregon Parenting Education Collaborative (OPEC).

Visit the website parentingsuccessnetwork.org to see a calendar of classes, upcoming special events for families and resources to help parents raise happy, healthy children. Visit our Facebook and Instagram pages for announcements of local opportunities.

Linn Benton Lincoln Early Learning Hub

A collection of programs and service providers from health care, social services, K-12 education, early childhood education along with parents and business working together to increase family stability, improve kindergarten readiness and ensure service coordination that is equitable and culturally and linguistically competent.

Student Life and Leadership

Student Union - Forum 120, 541-917-4457

Email: getinvolved@linnbenton.edu

https://www.linnbenton.edu/current-students/slc/index.php

Get the most out of your college experience by diving into activities beyond the classroom! At LBCC, there are endless ways to get involved, make connections, and have fun while building valuable skills. Whether you're interested in student government, clubs, volunteering, co-curricular programs, student employment, or exciting campus events, there's something for everyone.

Getting started is easy—stop by the Student Union, send us an email, or give us a call to learn how you can join in and make the most of your time at LBCC!

Clubs and Co-Curriculars

https://www.linnbenton.edu/current-students/clubs/index.php

Get involved, make friends, and explore your passions at LBCC! Clubs and co-curricular programs offer great ways to connect with others while having fun and gaining valuable experience.

Clubs are completely student-led, meaning they're created and run by students based on shared interests. If you don't see a club that fits your passion, you can start your own! From the Gay-Straight Alliance and Active Minds Club to the Dance Club and LBFilm Club, there's something for everyone.

Co-curricular programs are tied to specific areas of study or college programs, giving students hands-on experience in their fields. Whether you're interested in Performing Arts, Vocal Music, the Remote Operated Vehicle Team, or the Equestrian Team, these programs allow you to dive deeper into your interests while building career-related skills.

Volunteer Program

https://volunteer.linnbenton.edu/

Make a difference, gain experience, and have fun while giving back! LBCC's Student Life and Leadership Volunteer Program is your chance to connect with your community, explore career paths, and build skills that look great on a resume. Whether you're passionate about helping others, want to meet new people, or just need a meaningful way to get involved, volunteering is a rewarding way to make an impact.

From campus events to local service projects, there are plenty of ways to jump in—so why not start today?

Student Employment

https://www.linnbenton.edu/current-students/work/index.php

Email: Studentemployment@linnbenton.edu

If you are a student looking for a job that works with your class schedule, or are looking for help with your applications, then visit Student Employment in Willamette Hall, suite 200N or send us an email at studentemployment@linnbenton.edu.

Student Leadership Council: Student Government and Programming

Student Union - Forum 120, 541-917-4457

Email: getinvolved@linnbenton.edu

https://www.linnbenton.edu/current-students/slc/index.php

The Student Leadership Council (SLC) is the voice of LBCC students, ensuring that student perspectives shape college policies, decisions, and events. From managing ASLBCC student fees to planning exciting campus activities, the SLC plays a key role in making student life more engaging, inclusive, and impactful.

Our mission is to advocate for students and enhance the college experience by promoting community service, access to resources, cultural awareness, environmental sustainability, and student support—all while having fun and developing leadership skills!

The Student Leadership Council gives you the opportunity to plan engaging events for students, to serve on college committees, and participate in student government. The President and Vice-President are elected and all other members hold positions on the SLC through an appointment process. Any admitted student who meets eligibility requirements is eligible to hold a position. SLC positions range from event planning to student outreach, student advocacy, finance, judiciary, and more. Students who serve on SLC are eligible to receive tuition grants. Contact Student Life and Leadership at 541-917-4457 or email getinvolved@linnbenton.edu.

GENERAL GRADUATION REQUIREMENTS

Graduation requirements for degrees and certificates are subject to approval of the LBCC Board of Education, the Oregon Department of Education, and the Department of Community College and Workforce Development. See AR 4020-13 for LBCC's rule establishing the institutional standards for awarding degree, certificates, and diplomas.

Graduation is not automatic. You must complete a Graduation Application by the end of the fourth week of the term prior to the term you plan to graduate. The Graduation Application can be found online. Deadline dates for submitting an application for graduation are published on the LBCC website.

General Requirements (apply to degrees and certificates):

- The awarding of a credential becomes official only when graduation information has been posted to your transcript.
- You need to complete program requirements from any of the last five catalog years in which you earned at least one credit. Credential requirements may not be combined from multiple years.
- All graduation requirements of the credential program must be met.

Two-Year Degrees

To be awarded a two-year degree, students must complete all appropriate coursework as indicated in the LBCC catalog and meet the following standards:

- Complete a minimum of 90 credits of college-level coursework.
- Earn a minimum of 24 LBCC credits (12 for the AAOT) of which at least 15 (8 for the AAOT) are in their major field. No credits granted for prior learning can be used to fulfill this requirement.
- Have a minimum cumulative GPA of 2.00 at the time the degree is awarded.
- To earn more than one degree or to major in more than one field, the student must complete an additional 24 credits for each program beyond those required for the first degree.

One-Year Certificates

To be awarded an one-year certificate, students must complete all appropriate coursework as indicated in the LBCC catalog and meet the following standards:

- Complete a minimum of 45 credits of college-level coursework. Up to 12 prior learning credits may be used to meet requirements.
- Earn at least 12 LBCC credits toward the certificate. No credits granted for prior learning can be used to fulfill this requirement.
- Up to 12 prior learning credits may be used to meet requirements.
- The maximum number of “P” credits allowed is 8, not including those with an obligatory “P” grade.

Less-Than-One-Year Certificates

To be awarded a less-than-one-year certificate, students must complete all appropriate coursework as indicated in the LBCC catalog and meet the following standards:

- Earn all credits toward the certificate from LBCC. No credit for prior learning may be used to meet requirements.
- The maximum number of P credits allowed is 8, not including those with an obligatory P grade.
- Have a minimum cumulative GPA of 2.00 in the LBCC courses complete for the program, at the time the certificate is awarded.

Graduation Requirements for Specific Degrees

For Graduation Requirements for specific degree and certificate programs, see the following sections in this catalog:

- Requirements for the Associate of Science (p. 8)(AS) degree (p. 11)
  - Liberal Arts Core (p. 11) Requirements are included in the Associate of Science degree section.
- Requirements for the Associate of Applied Science (p. 56) (AAS) degree
- Requirements for the Associate of Arts Oregon Transfer (p. 102) (AAOT) degree

- Requirements for the Associate of Arts Transfer (AAT) degree
- Requirements for the Associate of Science Transfer (AST) degree
- Requirements for the Associate of General Studies (p. 107) (AGS) degree
- Requirements for the Core Transfer Map (p. 108) (CTM)
- Requirements for the Oregon Transfer Module (p. 109) (OTM)

OTHER LEARNING OPPORTUNITIES

Adult Basic Education (ABE)

Takena Hall abs@linnbenton.edu

541-917-4701

https://www.linnbenton.edu/community/alt-paths/index.php

The ABE program offers a variety of classes to adults who want to improve their basic skills to better prepare for the workplace and/or college-level coursework. Instruction is varied, and the emphasis is on a positive learning environment. Subjects may include computer skills, communication, writing, and math. Classes are offered by the Adult Basic Skills department, so arrangements must be made with the department to participate in ABE classes.

General Education Development (GED®) Prep

Takena Hall abs@linnbenton.edu

541-917-4710

https://www.linnbenton.edu/community/alt-paths/index.php

GED® preparatory classes are offered for adults who want to improve their general knowledge and skills in writing, reading, math, science and social studies in order to prepare to earn a GED® credential. Direct instruction, individualized study, and group work are provided. New students must attend a GED® orientation and participate in level testing before enrolling. If you already have a GED® or high school diploma, you may still attend Adult Basic Education (ABE) classes to improve your skills. GED classes are offered in both English and Spanish.

If you are under 18, you must present either a signed Release from Compulsory Attendance (ORS 339.30) on official school letterhead from your most-recently attended school or a Parent Assurance Form and GED Authorization letter, which you can obtain from your local homeschool office. New students must attend an orientation before enrolling in classes.

English Language Acquisition (ELA)

Takena Hall abs@linnbenton.edu

541-917-4710

https://www.linnbenton.edu/community/alt-paths/index.php

The English Language Acquisition (ELA) program assists resident immigrant and refugee non-native speakers in learning essential English for success in the workplace and in increasing academic skills for further education. Classes, which may be offered during the days and evenings at the Benton Center and the Albany campus, are taught in a supportive environment that promotes cultural competence. Some classes are available remotely. Every new student must attend an orientation and participate in level testing in order to enroll in the program.

LBCC Community Education sometimes offers additional classes for English language learners who are visitors to the United States and not permanent residents.

Community Education & Customized Training

Ryan Kinnett, Community Education Manager:

541-917-4843

Sue Stone, Community Education Coordinator:

541-917-4926

Community Education

Community Education offers non-credit, personal enrichment opportunities to learners across the lifespan. Class offerings include language and writing, recreation and dance, computers and technology, fitness and health, music and art, and more. Community Education classes are held on all LBCC campuses and at partner locations throughout the mid-Willamette Valley.

Customized Training

Customized Training offers non-credit courses tailored to fit the needs of your business, team and/or employees. Our diverse instructor base can deliver customized courses, which will align with the culture and dynamic of your business and/or team. These trainings can be delivered at your site or any LBCC location.

Commercial Driver License (CDL)

Tatiana Wicke, CDL Program Coordinator:

541-917-4961

cdl@linnbenton.edu

Our federally approved Commercial Driver License (CDL) program is a partnership program with the Knife River Training Center in Albany, Oregon. Our students obtain an unrestricted Class A or B license, driving on 1.5 miles of closed circuit roads before driving on public roads. We maintain a 3:1 student-to-instructor ratio, resulting in a high first-time pass rate. On-site catered lunches are a part of tuition (and the community experience of our class!). You can learn more about the program by reviewing our Program Packet.

Cooperative Work Experience

McKenzie Hall 210, 541-917-4787,
https://www.linnbenton.edu/current-students/cwe/index.php

Cooperative Work Experience (CWE) provides students with the opportunity to earn up to 12 credits per year for working or volunteering in a job related to their LBCC program of study. This allows students to gain work experience, make professional contacts and apply classroom knowledge within a real-world setting. Students may be exposed to work methods not taught in the classroom and have access to equipment not typically available in the college laboratories. A primary focus of CWE is to reinforce classroom theory and provide learning experiences not available in the classroom.

No more than 24 credits of CWE can be applied toward an Associate of Applied Science degree or 12 credits for a One-Year Certificate of Completion.

Certain programs require that students enroll in a (1) one credit CWE online Seminar class during their first term of CWE. The CWE Seminar instructs students on employability skills, cover letters, resume writing, safety and harassment policies, and employment searches. CWE offers a class on Career Exploration for students who are exploring different majors. Similar to other CWE classes, students identify objectives, work a specified number of hours, and participate in related seminar activities. Credits earned are based upon identified objectives and number of hours worked.

If interested in building Cooperative Work Experience into a program at LBCC, discuss it with the program advisor and the CWE coordinator to plan the most appropriate term for registration. Students should plan their CWE the term before beginning working and allow ample time for locating a training site.

Corporate Training & Professional Development

Terri Houde, Corporate Trainer:

541-917-4276

Corporate Training

Helps organizations realize their vision and commitment to a well-trained and engaged workforce. Trainers listen to needs and help develop solid learning outcomes tailored to an organization. The goal is to develop opportunities that increase the performance of an organization.

Professional Development

Professional development classes increase an individual's career advancement opportunities. The goal of these classes is to offer knowledge and training to build new skills or add to existing skills, so that individuals can be more productive and successful in their chosen career.

Driver Education & Vehicle Safety

Melissa Richey, Vehicle Safety Coordinator:

541-917-4856

Driver Education

LBCC has over 25 years of experience teaching Driver Education in Linn and Benton Counties. Driver Education courses are approved by the Oregon Department of Traffic Safety Division and utilize their curriculum. Classes are non-credit, and include permit preparation and teen driver education.

Vehicle Safety

Vehicle Safety courses are non-credit classes designed to gain pre-employment, industry-related skills. Courses include forklift training. Other courses include AARP driver safety, offered in partnership with AARP, and motorcycle safety classes, offered in partnership with TEAM Oregon.

Jobs Program

Program Coordinator: 541-259-5892

The JOBS (Job Opportunities and Basic Skills) Program offers participants a unique opportunity to explore options available to them as they make life and career transitions. Staff members work closely with other college departments and community organizations to provide educational, professional, technical and counseling services as part of their comprehensive job training and educational programs.

The goal of the JOBS Program is to enable individuals to make the transition from public assistance to self-sufficiency. Students are referred by the Oregon Department of Human Services and work with college faculty to develop individual programs that help prepare them for full-time, unsubsidized employment. Instructional areas include life and career planning; adult basic education; short-term, intensive professional/technical training; work site training; job search instruction and job retention and career development.

Remote Classes

LBCC offers a variety of remote synchronous and remote asynchronous classes. Students who find it difficult to attend a class on campus have an alternative that gives them the flexibility of pursuing their educational goals by utilizing online tools. This technology delivers educational opportunities directly to the student, whether in the home, in the workplace or in a distant community. Students can search by Remote campus in the Schedule of Classes for a list of these classes.

Registration Information

Students register for remote LBCC classes the same way they do for face-to-face classes. Students may apply for admission, take placement tests, complete orientation, use advising and register for classes online or at the Albany campus.

Small Business Development Center

Katie Borninski, SBDC Program Assistant:

541-917-4929, SBDC@linnbenton.edu

For new and existing business owners, the Small Business Development Center (SBDC) provides expert advice and resources to start, grow, scale, and transition a business. Offerings include confidential, no cost 1:1 business advising and workshops designed for small business owners and entrepreneurs. Topics include marketing, sales, financial planning, business plan development, and more. All services are provided fully in English and in Spanish. The LBCC SBDC is jointly sponsored by the College, the U.S. Small Business Administration, Business Oregon, and various grants from foundations and our local partners. El SBDC ofrece su programa en español para dueños de pequeños negocios.

Workforce Education: Health Occupations

Nursing Assistant Program & Regional High School Health Occupations Program

Nursing Assistant Program Assistant

541-917-4738

Regional High School Health Occupations Coordinator

541-917-4972

https://www.linnbenton.edu/future-students/explore-lb/programs/nursing-assistant.php

Upon successful completion of this non-credit course, you will be prepared to apply for the Oregon State Board of Nursing certification exam for nursing assistant. LBCC coordinates the Regional High School Health Occupations programs for high schools in Linn and Benton Counties.

LBCC'S ALCOHOL AND DRUG FREE PROGRAM

As one part of its Alcohol- and Drug- free (Workplace/School) Program, Linn-Benton Community College has developed resources to provide students and staff with information about the health risks associated with the use of illegal drugs and abuse of alcohol. It also includes standards of conduct required of students and staff, LBCC sanctions, legal sanctions, and counseling and treatment resources available in the area. This document has been printed here in abbreviated form. To obtain the full-text document, call 541-917-4848 or view online at https://linnbenton.edu/about/policies/drug-free.php.

I. Introduction

Linn-Benton Community College is legally required and ethically committed to the prevention of illegal drug use and the abuse of alcohol by both students and employees. Drug and alcohol abuse is a significant public health problem, affecting our level of general health, performance, and productivity. In addition, the abuse of drugs can adversely affect an organization's level of safety as well as its public confidence and trust. And lastly, with reference to "The Drug-Free Schools and Communities Act Amendment of 1989 (Public Law 101-226),*"...No institution of higher education shall be eligible to receive funds or any other form of financial assistance under any Federal program, including participation in any federally funded or guaranteed student loan program, unless it certifies to the Secretary that it has adopted and has implemented a program to prevent the use of illicit drugs and the abuse of alcohol by students and employees..."*

In brief, this document has been developed by LBCC to comply with the current federal law and to educate and inform its students and employees of the health risks, counseling and treatment resources, and sanctions for noncompliance. Linn-Benton will biennially review this program to determine its effectiveness and implement changes if needed and to ensure the sanctions required are consistently enforced.

II. Standards of Conduct

Students

Alcohol Unlawful use, possession or distribution of alcoholic beverages. Public intoxication, possession or use while on College property or at events except as expressly permitted by College policies. Disruptive behavior or other Code violations due to alcohol intoxication.

Drugs Unlawful possession or distribution of unlawful drugs, or narcotics to those for whom they are not prescribed, except as expressly permitted by College policy. The unlawful underage use of any substance and/or the non-prescription use of a prescription substance is not permitted. Being impaired by the use of any non-prescribed substance is not permitted. Impairment shall be evidenced by inappropriate behavior.

Marijuana Marijuana possession and/or use on campus is prohibited in all locations.

Smoking and Tobacco Use Smoking, vaping, chewing tobacco, or the use of other inhalants or tobacco products in any unauthorized location or by any person under the age of 21. Authorized locations are the smoking/vaping shelters only. Any attempts to purchase or distribute smoking or inhalant products that are unlawful (example, distribution to persons under 21). See Administrative Rule 5045-02.

In addition, no student regardless of age may use, possess or distribute alcoholic beverages or controlled substances when traveling with LBCC to any college-sponsored trip, activity, or other event, during the entire course of travel.

Participating in some programs may require a criminal background check or drug/alcohol testing. LBCC and its partners reserve the right to perform criminal background checks and/or drug/alcohol tests for programs that involve placement contact with vulnerable populations or when mandated by external agencies in accordance with employers and in accordance with state and federal law. Examples may include, but are not limited, to cooperative education, service learning and child care.

Employees

The Board of Education seeks to ensure compliance with the Drug Free Workplace Act of 1988 and the Drug Free Schools and Communities Act Amendments of 1989 (Public Law 101-226). It is also the goal of the Board that the College intentionally promotes the highest quality educational experience for students by utilizing a workforce whose performance is not impeded by the use of drugs or alcohol.

LBCC specifically prohibits the use, distribution or possession of alcohol, illegal drugs or other unauthorized controlled substances while engaged in work duties on campus (including parking areas and grounds). This prohibition includes the use of such substances during

non-work time (such as personal meal/break time) or while otherwise performing their work duties away from College premises, if such use may result in job impairment.

This prohibition also applies to employees traveling overnight for College-related functions who may be called upon or responsible for student-related services, as impairment may inhibit service quality and may cause potential liability under the College's liability and workers' compensation insurance policies. Included within this prohibition are lawful controlled substances which have been illegally or improperly obtained.

Drugs and alcohol are not allowed on campus or at College-related functions except as they relate to the teaching/learning process, or as specifically allowed and sanctioned by Administrative Rule 5045-01- Use of College Facilities and Food/Conference Services.

All employees and/or sponsors of any on-campus or College-sponsored activity or social event at which alcoholic beverages are served must abide by all applicable laws. Sponsors must obtain and follow applicable procedures.

III. A Description of the Health Risks Associated with the Use of Illicit Drugs and the Abuse of Alcohol

Illicit Drugs

Marijuana is addictive and can cause impaired short-term memory, visual tracking, heart rate, slowed reaction time/poor coordination, lung disease and damage to reproductive functions. LBCC enforces state and federal laws. Marijuana remains an illicit drug under federal law; its use is not permitted on any LBCC campus. Students must not be under the influence of marijuana while on LBCC properties or while engaging in classes or other LBCC activities.

Cocaine and Crack-Cocaine are highly addictive and may cause impaired judgment, short attention span, irritability, depression, mood swings, malnutrition, severe weight loss and liver damage, coma, seizure and heart attack.

PCP, LSD, Heroin, Mescaline, Morphine, other Opiates have a wide variety of negative health effects which may include hallucinations, mental confusion and/or permanent loss of mental function, addiction, convulsions, coma or death.

Prescription Drugs are too often used to reduce stress and are not safe unless they are taken as prescribed. If abused, they can lead to malnutrition, sluggishness or hyperactivity, impaired reflexes, addiction and brain damage, coma, or death.

Alcohol is the most commonly abused drug and can cause loss of concentration, poor judgment and coordination, impaired memory, drowsiness and mood swings, liver damage/cirrhosis of the liver, high blood pressure and heart attack, pancreatitis, various cancers and heart disease.

IV. A Description of the Applicable Legal Sanctions under Local, State, and Federal Law for Unlawful Possession, Use, or Distribution of Illicit Drugs and Alcohol

The following chart describes the penalties in general for possession of key drugs according to the Federal Drug Schedules.

	Maximum Prison Time	**Maximum Fine**
Schedule I – Class A Felony		
Heroin, LSD, other hallucinogens, other,	20 Years	$100,000
Schedule II – Class B Felony		
Methadone, morphine, cocaine, PCP,	10 Years	$100,000
Schedule III – Class C Felony		
Non-amphetamine stimulants, hydrocodone,	5 years	$100,000
Schedule IV – Class B Misdemeanor	6 months	$1,000
Schedule V – Class B Misdemeanor	30 days	$500

Delivery of less than 5 grams or possession of less than 1 ounce of marijuana is a violation. HB2479 establishes that with mandatory evaluation, education and treatment services for those under 18 years of age. If services are successfully completed, the charge will be dropped. Oregon has strong laws allowing cars, boats, etc. that transport illegal drugs to be seized and forfeited. Alcohol is an illegal drug for those under 21 years of age. For drivers under 18, ANY detectable amount of alcohol is grounds for losing their license until they are 18.

Misrepresenting one's age for the purpose of obtaining alcoholic beverages is a Class C Misdemeanor. There are many more laws pertaining to alcohol and other drugs. A criminal conviction may bar a student from their chosen career path or an employee from successful employment with the college.

V. LBCC Sanctions

Students

The *Students Rights, Responsibilities and Conduct Code* outlines the procedures the college will follow for students who violate either the drug or alcohol policies. These procedures provide for due process for students. Those found responsible for misconduct may be subject to the following disciplinary actions:

- *disciplinary warning* (notice that a student's conduct in a specific instance does not meet college standards and that continued misconduct may result in more serious disciplinary action);
- *disciplinary probation* (written notice that the student found in violation of the college standards may continue to be enrolled under stated conditions);
- *other educational activities* sanctions to provide opportunities for students to learn about alcohol and other drugs and reflect on their own behavior;
- *temporary exclusion* (exclusion from classes or activities for up to two class meetings or longer);
- *suspension* (suspension for a fixed period of time which may include forfeiture of the right to enter the campus, exclusion from one or more classes, or exclusion from classes and/or activities; and
- *expulsion* (termination of student status).

Further supplemental sanctions may be imposed which clearly address the issues involved in the misconduct.

Employees

The College will impose sanctions or require satisfactory completion of a drug abuse assistance or rehabilitation program. Sanctions imposed may include *disciplinary probation* (the suspension of a more severe penalty for a specific time period, based upon good behavior), *suspension* (the temporary barring from employment for a specific time period, without pay), and/or *termination* (the severance of employment with the College).

VI. Assistance Programs Available to Students and Employees

Benton County Alcohol and Drug Treatment Program	1-800-232-7192
Linn County Alcohol and Drug Treatment Program	541-967-3819 (Albany)541-451-5932 (Lebanon) 541-367-3888 (Sweet Home)
Alcoholics Anonymous, Mid-Willamette Valley	541-220-3111
Ala-Non, Linn & Benton counties	541-224-6651
Community Outreach/ASSETS	541-758-3000
SAMHSA National Helpline	1-800-622-4357
Milestones Family Recovery Program	541-753-2230 (Women's Residential)541-753-7801 (Men's Residential) 541-286-4489 (Women's Outpatient)
Narcotics Anonymous Helpline	1-877-233-4287
Serenity Lane, Albany	541-928-9681
Teen Challenge, Inc. Willamette Valley	971-491-1002

College Resources for Students:

Advising Center, Takena Hall	541-917-4780

College Resources for Employees:

LBCC provides an Employee Assistance Program (EAP), Canopy, available to all contracted employees. Through this program, each employee and their dependents are allowed eight visits per year at no cost for appraisal, limited counseling and/or referral. All employee contact with EAP is **strictly confidential**. Phone numbers for EAP include: (800-433-2320) or (503-850-7721).

FACULTY AND ADMINISTRATIVE STAFF

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Oregon State Board of Education

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Jeff Davis, Zone 6-7

Administration

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Direct-Dial Phone Numbers

All LBCC campus offices have direct-dial numbers for your convenience. These bypass the college switchboard and save time for you as well as for the college. Please use the direct-dial numbers whenever possible.

Switchboard 541-917-4999

ABE/GED 541-917-4710

Academic Foundations 541-917-4587

Accessibility Resources 541-917-4690

Admissions, Records and Registration 541-917-4811

Advanced Manufacturing Technology & Transportation 541-917-4658

Advising/Counseling/Career Center 541-917-4780

Albany Community Education 541-917-4840

Benton Center 541-757-8944

Business, Education, and Liberal Arts 541-917-4766

Business Office 541-917-4300

Campus Public Safety 541-917-4440

Campus Store 541-917-4950

College Advancement & Foundation 541-917-4209

Conference Services 541-917-4385

Family Connections 541-917-4899

Financial Aid & Veteran Affairs 541-917-4850

First Resort 541-917-4483

Healthcare 541-917-8907

Human Resources 541-917-4420

JOBS Program 541-917-4875

Learning Center 541-917-4684

Library 541-917-4638

Nursing 541-917-4511

Parenting Education 541-917-4907

President’s Office 541-917-4200

Roadrunner Resource Center 541-917-4375

Science, Engineering & Math 541-917-4413

Student Life & Leadership 541-917-4457

Testing Services 541-917-4781

Transcripts 541-917-4830

Transfer Center 541-917-4237

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