

# CIVIL ENGINEERING EMPHASIS, AS - WITH PORTLAND STATE UNIVERSITY

Program Code: AS.PSUCIVILENGR

The Associate of Science with an emphasis in Engineering is for students interested in transferring a bachelor's degree to Portland State University, Oregon State University, Oregon Tech (Oregon Institute of Technology) or George Fox University.

For information contact Eric Lee, 503-594-6163 or [elee@clackamas.edu](mailto:elee@clackamas.edu)

## Outcomes

### PROGRAM OUTCOMES

Upon successful completion of this program, students should be able to:

- apply the fundamental elements of engineering design;
- employ mathematics, science, and computing techniques in a systematic and rigorous manner to support the study and solution of engineering problems;
- conduct and document laboratory experiments in the sciences and engineering, effectively communicating determined quantitative relationships using both graphs and equations;
- exhibit good teamwork skills and serve as effective members of laboratory and project teams;
- articulate and justify technical solutions to an audience through oral, written, and graphical communication.

## Requirements

Course	Title	Credits
<b>First Year</b>		
<b>Fall Term</b>		
CH-221	General Chemistry	5
ENGR-111	Introduction to Engineering	3
MTH-251	Calculus I	5
WR-121	English Composition	4
<b>Credits</b>		<b>17</b>
<b>Winter Term</b>		
CH-222	General Chemistry	5
ENGR-112	Engineering Programming	3
MTH-252	Calculus II	5
<b>Credits</b>		<b>13</b>
<b>Spring Term</b>		
COMM-111	Public Speaking	4
MTH-254	Vector Calculus	5
WR-227	Technical Report Writing	4
<b>Arts &amp; Letters Electives (p. 1)</b>		<b>4</b>
<b>Credits</b>		<b>17</b>

Course	Title	Credits
<b>Second Year</b>		
<b>Fall Term</b>		
ENGR-211	Statics	4
GIS-201	Introduction to Geographic Information Systems	3
PH-211	General Physics With Calculus	5
<b>Social Science Electives (p. 1)</b>		<b>4</b>
<b>Credits</b>		<b>16</b>
<b>Winter Term</b>		
CDT-103	Computer-Aided Drafting I	3
ENGR-212	Dynamics	4
MTH-256	Differential Equations	4
PH-212	General Physics With Calculus	5
<b>Credits</b>		<b>16</b>
<b>Spring Term</b>		
ENGR-213	Strength of Materials	4
MTH-261	Linear Algebra	4
PH-213	General Physics With Calculus	5
<b>Select one of the following:</b>		<b>3-4</b>
<b>Arts &amp; Letters Electives (p. 1)</b>		
<b>Social Science Electives (p. 1)</b>		
<b>Credits</b>		<b>16-17</b>
<b>Total Credits</b>		<b>95-96</b>

## Arts & Letters Electives

All courses in **ASL, COMM, ENG, FR, GER, HUM, PHL, SPN, WR**. Note that native speakers should only take advanced (300 level or above) world language courses

Non-performance based courses in art, journalism, music, and theater also meet this requirement:

Code	Title	Credits
ART-101	Art Appreciation	3
ART-205	History of Art/Romanesque Through Baroque	4
ART-206	History of Art/Enlightenment Through Contemporary	4
J-211	Mass Media & Society	4
MUS-105	Music Appreciation	3
MUS-141	Introduction to the Music Business	3
MUS-205	Music Literature: History of Jazz	4
MUS-206	Music Literature: History of Rock	4
MUS-230	Music and Media: Sex, Drugs, Rock & Roll	4
TA-101	Appreciation of Theatre	4
TA-102	Appreciation of Theatre	4

## Social Science Electives

All courses in **ANT, EC, GEO, HST, PS, PSY, SOC, SSC, and WS**.

## Recommended

Take **CE-211 Plane Surveying and Mapping** at PSU before beginning their junior year at PSU. Take one additional Arts & Letters or Social Science elective.