

# ECOLOGICAL ENGINEERING EMPHASIS, AS - WITH OREGON STATE UNIVERSITY

Program Code: AS.OSUECOLENGR

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, or Oregon Tech (Oregon Institute of Technology).

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 graphical, numerical, and analytical solutions to an audience through oral and written communication.

## Requirements

### First Year

Fall Term		Credits
COMM-111Z	Public Speaking	4.00
ENGR-111	Introduction to Engineering	3.00
MTH-251Z	Differential Calculus	4.00
WR-121Z	Composition I	4.00
	<b>Credits</b>	<b>15</b>

### Winter Term

CH-221	General Chemistry	5.00
ENGR-112	Engineering Programming	3.00
MTH-252Z	Integral Calculus	4.00
	<b>Literature and the Arts Electives (p. 1)</b>	3.00-4.00
	<b>Credits</b>	<b>15-16</b>

### Spring Term

CH-222	General Chemistry	5.00
MTH-254	Vector Calculus	5.00
WR-227Z	Technical Writing	4.00
	<b>Credits</b>	<b>14</b>

### Summer Term

CH-223	General Chemistry	5.00
	<b>Credits</b>	<b>5</b>

### Second Year

Fall Term		Credits
ENGR-211	Statics	4.00

PH-211	General Physics With Calculus	5.00
	<b>Cultural Diversity Electives (p. 1)</b>	4.00
	<b>Difference, Power, and Discrimination Electives (p. 1)</b>	4.00

**Credits** 17

### Winter Term

CS-161	Computer Science I	4.00
HPE-295	Health & Fitness for Life	3.00
MTH-256	Differential Equations	4.00
PH-212	General Physics With Calculus	5.00

**Credits** 16

### Spring Term

ENGR-213	Strength of Materials	4.00
PH-213	General Physics With Calculus	5.00
PHL-102	Ethics	4.00

**Credits** 13

**Total Credits** 95-96

## Cultural Diversity Electives

Code	Title	Credits
ANT-232	Native Americans of North America	4.00
ENG-213	U.S. Latinx Literature	4.00
ENG-252	Hindu Mythology	4.00
GEO-110	Cultural & Human Geography	4.00
R-101	Judaism and Foundations of Religion	4.00
R-102	Christianity and Islam	4.00
R-103	Asian Religions	4.00
R-210	World Religions	4.00

## Difference, Power, and Discrimination Electives

Code	Title	Credits
HST-201	History of the United States	4.00
HST-202	History of the United States	4.00
HST-203	History of the United States	4.00
SOC-206Z	Social Problems	4.00

## Literature and the Arts Electives

Code	Title	Credits
ART-101	Art Appreciation	3.00
ART-204	History of Art/Ancient Through Medieval	4.00
ART-205	History of Art/Romanesque Through Baroque	4.00
ART-206	History of Art/Enlightenment Through Contemporary	4.00
ENG-104Z	Introduction to Fiction	4.00
ENG-105Z	Introduction to Drama	4.00
ENG-106Z	Introduction to Poetry	4.00
ENG-107	World Literature: Ancient Through Classical Times	4.00
ENG-108	World Literature: Early Middle Ages through the 18th Century	4.00
ENG-109	World Literature: The 19th through 21st Centuries	4.00
ENG-194	Introduction to Film	4.00
ENG-195	American Film	4.00

<b>Code</b>	<b>Title</b>	<b>Credits</b>
ENG-201	Shakespeare	4.00
ENG-202	Shakespeare	4.00
ENG-204	British Literature: Ancient to Enlightenment	4.00
ENG-205	British Literature: Romantic to Contemporary	4.00
ENG-213	U.S. Latinx Literature	4.00
ENG-226	Popular Literature	4.00
ENG-230	Documentary Film	4.00
ENG-241	Norse Mythology	4.00
ENG-250	Greek Mythology	4.00
ENG-251	Celtic Mythology	4.00
ENG-252	Hindu Mythology	4.00
ENG-253	American Literature: Pre-Columbian to Civil War	4.00
ENG-254	American Literature: 1865 to Present	4.00
ENG-255	American Literature: Topics in American Literature	4.00
ENG-260	Introduction to Women Writers	4.00
ENG-270	Introduction to Literary Criticism	4.00
MUS-105	Music Appreciation	3.00
MUS-205	Music Literature: History of Jazz	4.00
MUS-206	Music Literature: History of Rock	4.00