

# ELECTRICAL ENGINEERING EMPHASIS, AS - WITH PORTLAND STATE UNIVERSITY

Program Code: AS.PSUELECTENGR

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
CH-221	General Chemistry	5.00
CS-161	Computer Science I	4.00
ENGR-111	Introduction to Engineering	3.00
MTH-251	Calculus I	5.00
<b>Credits</b>		<b>17</b>

### Winter Term

CS-162	Computer Science II	4.00
ENGR-112	Engineering Programming	3.00
ENGR-171	Digital Logic	4.00
MTH-252	Calculus II	5.00
<b>Credits</b>		<b>16</b>

### Spring Term

COMM-111Z	Public Speaking	4.00
ENGR-271	Digital Systems	4.00
MTH-261	Linear Algebra	4.00
WR-121Z	Composition I	4.00
<b>Credits</b>		<b>16</b>

### Summer Term

MTH-254	Vector Calculus	5.00
<b>Credits</b>		<b>5</b>

### Second Year

#### Fall Term

ENGR-221	Electrical Circuit Analysis I	4.00
MTH-253	Calculus III	5.00
PH-211	General Physics With Calculus	5.00
WR-227Z	Technical Writing	4.00

**Credits 18**

#### Winter Term

ENGR-222	Electrical Circuit Analysis II	4.00
MTH-256	Differential Equations	4.00
PH-212	General Physics With Calculus	5.00
<b>Social Science Electives (p. 1)</b>		4.00

**Credits 17**

#### Spring Term

ENGR-223	Electrical Circuit Analysis III	4.00
PH-213	General Physics With Calculus	5.00
<b>Arts &amp; Letters Electives (p. 1)</b>		4.00
Select one of the following:		3.00-4.00

**Arts & Letters Electives (p. 1)**

**Social Science Electives (p. 1)**

**Credits 16-17**

**Total Credits 105-106**

## 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	3.00
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
J-211	Mass Media & Society	4.00
MUS-105	Music Appreciation	3.00
MUS-141	Introduction to the Music Business	3.00
MUS-205	Music Literature: History of Jazz	4.00
MUS-206	Music Literature: History of Rock	4.00
MUS-230	Music and Media: Sex, Drugs, Rock & Roll	4.00
TA-101	Appreciation of Theatre	4.00
TA-102	Appreciation of Theatre	4.00

## Social Science Electives

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