

ENGINEERING EMPHASIS, AS - WITH GEORGE FOX UNIVERSITY

Program Code: AS.GFENGINEER

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

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 |
|--|---|-----------|
| First Year | | |
| Fall Term | | |
| CH-221 | General Chemistry | 5 |
| ENGR-111 | Introduction to Engineering | 3 |
| MTH-251 | Calculus I | 5 |
| WR-121 | English Composition | 4 |
| Credits | | 17 |
| Winter Term | | |
| CH-222 | General Chemistry | 5 |
| ENGR-112 | Engineering Programming | 3 |
| MTH-252 | Calculus II | 5 |
| WR-122 | English Composition | 4 |
| Credits | | 17 |
| Spring Term | | |
| EC-201 or EC-202 | Principles of Economics: Micro or Principles of Economics: Macro | 4 |
| ENGR-115 | Engineering Graphics | 3 |
| MTH-254 | Vector Calculus | 5 |
| Intercultural Experience Electives (p. 1) | | 4 |
| Credits | | 16 |

| Course | Title | Credits |
|-------------------------------------|-------------------------------|----------------|
| Second Year | | |
| Fall Term | | |
| COMM-111 | Public Speaking | 4 |
| PH-211 | General Physics With Calculus | 5 |
| Engineering Electives (p. 1) | | 4 |
| History Electives (p. 1) | | 4 |
| Credits | | 17 |
| Winter Term | | |
| MTH-256 | Differential Equations | 4 |
| PH-212 | General Physics With Calculus | 5 |
| Engineering Electives (p. 1) | | 8 |
| Credits | | 17 |
| Spring Term | | |
| MTH-253 | Calculus III | 5 |
| MTH-261 | Linear Algebra | 4 |
| PH-213 | General Physics With Calculus | 5 |
| Engineering Electives (p. 1) | | 3-4 |
| Credits | | 17-18 |
| Total Credits | | 101-102 |

Engineering Electives

Electrical & Computer Engineering Majors:

| Code | Title | Credits |
|----------|--------------------------------|---------|
| ENGR-171 | Digital Logic | 4 |
| ENGR-221 | Electrical Circuit Analysis I | 4 |
| ENGR-222 | Electrical Circuit Analysis II | 4 |
| ENGR-271 | Digital Systems | 4 |

Biomedical, Civil, and Mechanical Engineering Majors:

| Code | Title | Credits |
|----------|---------------------------|---------|
| ENGR-211 | Statics | 4 |
| ENGR-212 | Dynamics | 4 |
| ENGR-231 | Properties of Materials | 4 |
| HPE-295 | Health & Fitness for Life | 3 |

History Electives

| Code | Title | Credits |
|---------|---------------------------------|---------|
| HST-101 | History of Western Civilization | 4 |
| HST-102 | History of Western Civilization | 4 |
| HST-103 | History of Western Civilization | 4 |
| HST-201 | History of the United States | 4 |
| HST-202 | History of the United States | 4 |
| HST-203 | History of the United States | 4 |
| PS-205 | International Relations | 4 |

Intercultural Experience Electives

| Code | Title | Credits |
|----------|---|---------|
| ANT-103 | Cultural Anthropology | 4 |
| COMM-140 | Introduction to Intercultural Communication | 4 |
| ENG-107 | World Literature: Ancient Through Classical Times | 4 |

| Code | Title | Credits |
|-------------|--|----------------|
| ENG-108 | World Literature: Early Middle Ages through the 18th Century | 4 |
| ENG-109 | World Literature: The 19th through 21st Centuries | 4 |
| FR-101 | First-Year French I | 4 |
| FR-102 | First-Year French II | 4 |
| FR-103 | First-Year French III | 4 |
| FR-201 | Second-Year French I | 4 |
| FR-202 | Second-Year French II | 4 |
| FR-203 | Second-Year French III | 4 |
| GER-101 | First-Year German I | 4 |
| GER-102 | First-Year German II | 4 |
| GER-103 | First-Year German III | 4 |
| R-210 | World Religions | 4 |
| 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 |