

ENGINEERING - ASSOCIATE OF ENGINEERING DEGREE (AE)

Explore More About This Program: <https://cwi.edu/program/engineering>

Degree Quick Facts

- **Instructional School:** Industry, Engineering, and Trades
- **Department:** Engineering
- **Program Code:** ENGR.AE
- **Program Type:** Academic Transfer
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

NOTE: Courses required for this program *may* have an additional fee; more information can be found on the [Special Course Fees](#) web page.

Degree Requirements

Course	Course Title	Min Credits
General Education Requirements ¹		
CWI 101	Connecting With Ideas	3
ENGL 101	Writing and Rhetoric I (GEM 1)	3
ENGL 102	Writing and Rhetoric II (GEM 1)	3
COMM 101	Fundamentals of Oral Communication (GEM 2)	3
MATH 170	Calculus I (GEM 3)	5
CHEM 111	General Chemistry I (GEM 4)	3
CHEM 111L	General Chemistry I Lab (GEM 4)	1
PHYS 211	Physics for Scientists and Engineers I (GEM 4)	4
PHYS 211L	Physics for Scientists and Engineers I Lab (GEM 4)	1
<u>GE Elective course ²</u>		3
<u>GE Elective course ²</u>		3
Major Requirements		
ENGR 120	Introduction to Engineering	3
ENGR 290	Engineering Capstone	2
MATH 175	Calculus II	4
Select credits from the Engineering Technical Electives list below to bring the total credits earned to a minimum of 60 ³		19
Minimum Credit Hours Required		60

¹ Students who complete the Engineering program should note that the general education (GE) requirements for this program will **NOT** result in GE core completion with regard to transfer. However, the program was specifically created to help make transferring into a four-year Engineering program easier and will result in students being better prepared to transfer at a junior class level.

² It is recommended that students select a Humanistic and Artistic Ways of Knowing (GEM 5) course and a Social and Behavioral Ways of Knowing (GEM 6) course to fulfill this requirement.

³ To determine which courses from the Engineering Technical Electives are most appropriate, consult your advisor and refer to the applicable 2+2 guide.

Engineering Technical Electives

Course	Course Title	Min Credits
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Lab	2
CPSC 121	Computer Science I	4
CPSC 221	Computer Science II	3
ENGR 205	Engineering Graphics	2
ENGR 210	Engineering Mechanics: Statics	3
ENGR 220	Engineering Mechanics: Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
MATH 153	Statistical Reasoning	3
MATH 230	Introduction to Linear Algebra	3

MATH 275	Calculus III	4
MATH 285	Differential Equations with Matrix Theory ¹	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

¹ MATH 285 Differential Equations with Matrix Theory is required within the first two years by a majority of four-year Engineering programs at Idaho colleges/universities. It is strongly recommended that students complete it as part of their elective requirement for this program.

Degree Plan

The course sequence listed below is strongly recommended in order to complete your program requirements. Please register for each semester as shown using the Student Planning tool in myCWI. Plans may be modified to fit the needs of part-time students by adding additional semesters. Consult your advisor for any questions regarding this course sequence plan.

First Year

Fall		Credit Hours
CHEM 111	General Chemistry I (GEM 4)	3
CHEM 111L	General Chemistry I Lab (GEM 4)	1
CWI 101	Connecting With Ideas	3
ENGL 101	Writing and Rhetoric I (GEM 1)	3
MATH 170	Calculus I (GEM 3)	5
Total Semester Credit Hours		15

Spring

COMM 101	Fundamentals of Oral Communication (GEM 2)	3
ENGR 120	Introduction to Engineering	3
MATH 175	Calculus II	4
PHYS 211	Physics for Scientists and Engineers I (GEM 4)	4
PHYS 211L	Physics for Scientists and Engineers I Lab (GEM 4)	1
Total Semester Credit Hours		15

Second Year

Fall		Credit Hours
ENGL 102	Writing and Rhetoric II (GEM 1)	3
Engineering Technical Electives	Select a course from the list below ^{1,2}	4
Engineering Technical Electives	Select a course from the list below ²	3
Engineering Technical Electives	Select a course from the list below ²	3
GE Elective course ³		3
Total Semester Credit Hours		16

Spring

ENGR 290	Engineering Capstone	2
Engineering Technical Elective	Select a course from the list below ²	3

Engineering Technical Elective	Select a course from the list below ²	3
Engineering Technical Elective	Select a course from the list below ²	3
GE Elective course ⁴		3
Total Semester Credit Hours		14
Minimum Credit Hours Required		60

¹ MATH 285 Differential Equations with Matrix Theory is required within the first two years by a majority of four-year Engineering programs at Idaho colleges/universities. It is strongly recommended that students complete it as part of their elective requirement for this program. Please note that MATH 285 is currently only offered during fall semesters; for that reason, students are advised to complete the course during their second fall semester.

² To determine which courses from the Engineering Technical Electives are most appropriate, consult your advisor and refer to the applicable 2+2 guide.

³ It is recommended that students take a Humanistic and Artistic Ways of Knowing (GEM 5) course in order to fulfill this requirement.

⁴ It is recommended that students take a Social and Behavioral Ways of Knowing (GEM 6) course in order to fulfill this requirement. Specifically, the department recommends Engineering students take SCIE 102 Ethics in Science.

Engineering Technical Electives

Course	Course Title	Min Credits
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Lab	2
CPSC 121	Computer Science I	4
CPSC 221	Computer Science II	3
ENGR 205	Engineering Graphics	2
ENGR 210	Engineering Mechanics: Statics	3
ENGR 220	Engineering Mechanics: Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
MATH 153	Statistical Reasoning	3
MATH 230	Introduction to Linear Algebra	3
MATH 275	Calculus III	4
MATH 285	Differential Equations with Matrix Theory	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

Additional Advising Notes:

- Students who complete the Engineering program should note that the general education (GE) requirements for this program will **NOT** result in GE core completion with regard to transfer. However, the program was specifically created to help make transferring into a four-year Engineering program easier and will result in students being better prepared to transfer at a junior class level.
- Students who plan to transfer should select elective courses based on the needs of their transfer institution. See 2+2 agreements with the appropriate institution for more information.
- Please be sure to check the courses required for your final degree at the four-year institution you plan to attend after finishing at CWI. It is **absolutely imperative** that you know which classes are required to obtain a bachelor's degree at that institution.
- It is possible to get prior learning assessment (PLA) credit for ENGL 101 if the student successfully passes ENGL 102. Visit the [CWI Prior Learning Assessment](#) webpage for more information.

Program Learning Outcomes

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

- Possess the knowledge and skills in basic engineering that will allow for success in further academic pursuits within the engineering discipline.
- Appreciate the role of engineering in social, environmental, and political issues through the completion of general education courses.
- Understand the scientific method and apply it within a controlled environment.
- Evaluate their results and determine appropriate conclusions.
- Understand and represent quantitative scientific data in various graphical forms.
- Develop and increase the skills of both verbal and written communication within the sciences.
- Develop and increase skills in critical thinking and analytical reasoning through problem solution and analysis.