

ENVIRONMENTAL ENGINEERING, ASSOCIATE OF SCIENCE

The Associate of Science (AS) in Environmental Engineering degree will provide fundamental engineering skills. Environmental engineers manage our environment for the benefit of humanity and nature. They provide engineering solutions to problems with our land, air and water resources. In both public and private practice, environmental engineers work in interdisciplinary teams to manage environmental problems through application of scientific, engineering, and social skills. This degree was designed to transfer to Oregon State University's College of Engineering. Please consult your advisor for details.

GRADUATION REQUIREMENTS

Students must complete a minimum of 107 credit hours with a cumulative Grade Point Average (GPA) of 2.0 or better. All courses must be completed with a grade of 'C' or better. Twenty-four (24) credits must be completed at Southwestern before the degree is awarded. Courses that are developmental in nature, (designed to prepare students for college transfer courses), are not applicable to this degree. Students must complete the graduation application process one term prior to the term of completion (e.g., spring term graduates must apply during winter term).

LEARNING OUTCOMES

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
5. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
6. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

Math and writing placement are unique to each student and are determined during the admissions and intake advising process. Additional math or writing courses may be required prior to taking the math or writing program requirements in this degree. For more information on placement methods used, visit our college placement policy here.

PROGRAM GUIDE

Course	Title	Credits
First Year		
Fall		
ENGR111	Intro to Engineering	3

MTH251	Calculus I Differential Calculus	4
CHEM221	General Chemistry I	5
WR121	English Composition	4
Credits		16
Winter		
MTH252	Calculus II Integral Calculus	4
CHEM222	General Chemistry II	5
ENGR112	Engineering Computation	4
SP111	Fundamentals of Public Speaking	3
Credits		16
Spring		
CHEM223	General Chemistry III	5
WR227	Report Writing	4
DRFT110 or DRFT112	Computer Assisted Drafting I or Computer Assisted Drafting III	3
MTH264	Introduction to Matrix Algebra and Power Series ¹	4
Credits		16
Summer		
PE231	Wellness for Life	3
Social Science ⁴		3
Arts & Letters ⁴		3
Cultural Diversity ⁴		3
Credits		12
Second Year		
Fall		
CHEM245	Organic Chemistry I	4
MTH254	Vector Calculus I	4
PH211	General Physics with Calculus I	5
ENGR211	Statics	3
Credits		16
Winter		
ENGR212	Dynamics	3
PH212	General Physics with Calculus II	5
CHEM246	Organic Chemistry II ²	4
Arts & Letters ⁴		3
Credits		15
Spring		
MTH256	Differential Equations	4
PH213	General Physics with Calculus III	5
CHEM247 or BI234	Organic Chemistry III ³ or Microbiology	4
ENGR213	Strength of Materials	3
Credits		16
Total Credits		107

¹ Students transferring to Portland State University are required to take MTH260 in place of MTH264.

² Students transferring to Portland State University are required to take MTH255 in place of CHEM246.

³ Students transferring to Portland State University are required to take BI234 in place of CHEM247.

- ⁴ Select course from specific subject area from the AS course list.
- * All Honors courses may substitute for their equivalent requirements.