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).

PROGRAM STUDENT LEARNING OUTCOMES

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 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.
- Communicate effectively with a range of audiences.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- 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.

PROGRAM GUIDE

Course	Title	Credits
First Year		
Fall		
CHEM221Z	General Chemistry I	4
CHEM227Z	General Chemistry I Laboratory	1
ENGR111	Intro to Engineering	3
MTH251Z	Differential Calculus	4
WR121Z	Composition I	4
	Credits	**16**
Winter		
COMM111Z	Public Speaking	4
CHEM222Z	General Chemistry II	4
CHEM228Z	General Chemistry II Laboratory	1
ENGR112	Engineering Computation	4
MTH252Z	Integral Calculus	4
	Credits	**17**
Spring		
CHEM223Z	General Chemistry III	4
CHEM229Z	General Chemistry III Laboratory	1
DRFT110 or DRFT112	Computer Assisted Drafting I or Computer Assisted Drafting III	3
MTH264 or MTH260	Introduction to Matrix Algebra and Power Series [1] or Matrix Methods and Linear Algebra	4
WR227Z	Technical Writing	4
	Credits	**16**
Summer		
PE231	Wellness for Life	3
Social Science [4]		3
Arts & Letters [4]		3
Social Science Cultural Diversity [5]		3
	Credits	**12**
Second Year		
Fall		
CHEM245	Organic Chemistry I	4
ENGR211	Statics	3
MTH254	Vector Calculus I	4
PH211	General Physics with Calculus I	5
	Credits	**16**
Winter		
CHEM246 or MTH255	Organic Chemistry II [2] or Vector Calculus II	4
ENGR212	Dynamics	3
PH212	General Physics with Calculus II	5
Arts & Letters [4]		3
	Credits	**15**
Spring		
CHEM247 or BI234	Organic Chemistry III [3] or Microbiology	4
ENGR213	Strength of Materials	3
MTH256	Differential Equations	4
PH213	General Physics with Calculus III	5
	Credits	**16**
	Total Credits	**108**

[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.

[5] Choose from the following: ANTH201, ANTH202, ANTH203, ANTH221, ANTH222, ANTH223, ANTH224, ANTH230, ANTH231, ANTH232. ED258, HDFS140, HST140, PSY216, PSY231, SOC208, SOC213.