CHEMICAL ENGINEERING, ASSOCIATE OF SCIENCE

The Associate of Science (AS) in Chemical Engineering degree will provide fundamental engineering skills. Chemical engineering is the study and modeling of systems where heat and fluid flow are coupled with chemical reactions. Examples of systems are the human body, ground water, the atmosphere, the ocean, and chemical reactors. Natural systems are measured and modeled in order to understand present and future behavior. Man-made systems are specifically designed to convert raw materials into more useful products. 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 106 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.
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- 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.

PLACEMENT INFORMATION

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		
ENGR111	Intro to Engineering [1]	3
MTH251	Calculus I Differential Calculus	4
CHEM221	General Chemistry I	5
ENGR211	Statics [1]	3
	Credits	**15**
Winter		
MTH252	Calculus II Integral Calculus	4
CHEM222	General Chemistry II	5
ENGR112	Engineering Computation	4
WR121Z	Composition I	4
	Credits	**17**
Spring		
CHEM223	General Chemistry III	5
BI203	Introductory Biology [2]	4
MTH264	Introduction to Matrix Algebra and Power Series	4
WR227Z	Technical Writing	4
	Credits	**17**
Summer		
Social Science [4]		3
Arts and Letters [3]		3
Social Science (Cultural Diversity) [3]		3
	Credits	**9**
Second Year		
Fall		
CHEM245	Organic Chemistry I	4
MTH254	Vector Calculus I	4
PH211	General Physics with Calculus I	5
ENGR201	Electrical Fundamentals I	4
	Credits	**17**
Winter		
COMM111Z	Public Speaking	4
PE231	Wellness for Life [5]	3
PH212	General Physics with Calculus II	5
CHEM246	Organic Chemistry II	4
	Credits	**16**
Spring		
MTH256	Differential Equations	4
PH213	General Physics with Calculus III	5
CHEM247	Organic Chemistry III	4
Arts & Letters [3]		3
	Credits	**16**
	Total Credits	**107**

1. ENGR211 may require instructor consent if taken before completion of MTH252.
2. Select one from: BI201, BI202, or BI203.
3. Select course from specific subject area from the AS course list. Cultural Diversity elective must be a social science course.
4. Choose from the following: ANTH201, ANTH202, ANTH203, ANTH221, ANTH222, ANTH223, ANTH224, ANTH230, ANTH231, ANTH232. ED258, HDFS140, HST140, PSY216, PSY231, SOC208, SOC213.
5. 3 credits of PE 185 may substitute for PE 231