ELECTRICAL/COMPUTER ENGINEERING, ASSOCIATE OF SCIENCE

The Associate of Science (AS) in Electrical/Computer Engineering degree will provide fundamental engineering skills in circuit analysis and design, computer programming, engineering problem solving, and an understanding of the professional expectations and ethics of engineering. This program provides a two year foundation for transfer into a four year program in electrical or computer engineering. This degree was designed to transfer to Oregon Institute of Technology's College of Engineering or Oregon State University's College of Engineering. Please consult your advisor for details.

GRADUATION REQUIREMENTS

Students must complete a minimum of 105 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

- Students will demonstrate the ability to solve engineering problems using a variety of mathematical and computational methods.
- Students will learn and apply the required ethics expected in a professional engineering setting.
- Students will gain a fundamental understanding of electrical concepts and will be able to apply analysis techniques to electric circuits of varying complexity.
- Students will gain familiarity with transient analysis of circuits with time varying voltage and/or current sources including Fourier and Laplace analysis.
- Students will design and test electric circuits for practical applications.
- Students will be able to communicate designs and results effectively.
- Students will demonstrate an ability to function in interdisciplinary teams.

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.

PRE-PROGRAM COURSES

Students are required to take the following courses *prior to* the program courses, depending on students' college placement information. See advisor for details:

Code	Title	Credits
CS160	Computer Science Orientation (or higher)	4

PROGRAM GUIDE

Course	Title	Credits
First Year		
Fall		
ENGR111	Intro to Engineering	3
CHEM221	General Chemistry I	5
MTH251	Calculus I Differential Calculus	4
WR121Z	Composition I	4
	Credits	**16**
Winter		
COMM111Z	Public Speaking	4
CS161	Introduction to Computer Science I [5]	4
ENGR112	Engineering Computation	4
MTH252	Calculus II Integral Calculus	4
Social Science [1]		3
	Credits	**19**
Spring		
BI103	General Biology [2]	4
CS162	Introduction to Computer Science II	4
MTH264	Introduction to Matrix Algebra and Power Series [6]	4
Cultural Diversity [3]		3
WR227Z	Technical Writing	4
	Credits	**19**
Second Year		
Fall		
MTH254	Vector Calculus I	4
PH211	General Physics with Calculus I	5
CS261	Data Structures	4
ENGR201	Electrical Fundamentals I	4
	Credits	**17**
Winter		
MTH255	Vector Calculus II	4
PH212	General Physics with Calculus II	5
ENGR202	Electrical Fundamentals II	4
PE231	Wellness for Life [4]	3
Arts & Letters [1]		3
	Credits	**19**
Spring		
PH213	General Physics with Calculus III	5
ENGR203	Electrical Fundamentals III	4
MTH256	Differential Equations	4
Arts & Letters [1]		3
	Credits	**16**
	Total Credits	**106**

[1] Select appropriate course in specific subject area from the course listed in AS Social Science or Arts and Letters category.

[2] BI101, BI102, BI103, BI201, BI202, BI203, BI234, ENV235, F250 may be substituted. Transfer to OIT for Civil Engineering should substitute G201.

[3] Cultural Diversity: ANTH224, ANTH231, ANTH232, or HST104 will satisfy this requirement. Must be a Social Science course.

[4] PE231, HE250, or three (3) credits of PE185 sport/activity courses will satisfy this requirement.

[5] CS161 may require instructor consent to register, talk to your advisor for details.

[6] MTH253 may be substituted for MTH264, students transferring to Oregon Institute of Technology and Portland State University must take MTH253. Students transferring to Portland State University are required to take MTH253 in place of MTH264.