Engineering Pre-Major - Electrical Engineering Subplan

Associate in Engineering Science Degree (AES1)

swic.edu/engineering

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Electrical Engineering is the study and application of electricity, electronics, and electromagnetism for the design, development, testing, and implementation of systems that power and connect to the modern world. Electrical and Electronic Engineers design, develop, and supervise the manufacture and maintenance of electrical and electronic equipment, components, and systems. This program subplan provides a strong foundation in fundamental areas of mathematics and physics. Graduates are well-prepared to pursue a Bachelor's degree in Electrical Engineering and learn to analyze and design circuits, power systems, and communication networks.

Articulation Agreements

- SIU-Carbondale – B.S. Electrical Engineering
- SIU-Edwardsville – B.S. Electrical Engineering

Important Information

The following semester sequence is designed as a guide for students enrolled full time and is not intended as a required schedule. Students should take courses in progression following the appropriate requisites. For information on requisites, please refer to the *Course Description Guide* (yellow section) in this catalog.

Associate in Applied Science Degree Electrical Engineering Subplan

First Year Fall Semester			Semester Credits
MATH	203	Analytic Geometry & Calculus I*	5
CHEM	105	General Chemistry I	5
ENG	101	Rhetoric & Composition I*	3
Human Relations Selection			3
Total Semester Credits			**16**

First Year Spring Semester			Semester Credits
MATH	204	Analytic Geometry & Calculus II *	5
PHYS	204	Physics - Mechanics*	4
ENG	102	Rhetoric & Composition II	3
COMM	151	Introduction to Public Speaking OR	
COMM	155	Interpersonal Communications	3
Total Semester Credits			**15**

Second Year Fall Semester			Semester Credits
MATH	205	Analytic Geometry & Calculus III*	4
MATH	171	Computer Science I-JAVA* OR	
MATH	210	Computer Programming for Engineers* OR	
ENGR	263	Analytical Mechanics-Statics*	3-4
PHYS	205	Physics - Heat, Elec. & Magentism*	4
ECON	201	Principles of Macroeconomics OR	
ECON	202	Principles of Microeconomics OR	
POLS	150	Introduction to American Government	3
Total Semester Credits			**14-15**

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Second Year Spring Semester			Semester Credits
MATH	290	Differential Equations*	3
PHYS	206	Physics-Light & Modern Physics* OR	
General Education Selection			3-4
ENGR	271	Electrical Circuits* OR	
MATH	292	Linear Algebra*	3
BIOL	100	Introduction to Biology OR	
BIOL	101	Principles of Biology I OR	
BIOL	107	Human Genetics OR	
General Education Selection			3-4
General Education Selection			3
Total Semester Credits			**15-17**
Total Credits			**60-63**

Career Opportunities

A graduate of Associate of Engineering Science-Electrical Engineering Subplan can find employment as:

- Engineering Technician
- CAD Technician
- Electrical Designer
- Instrumentation Technician

A student who transfers to earn a Bachelor of Science in Electrical Engineering can find employment as:

- Aerospace Electrical Engineer
- Artificial Intelligence and Machine Learning Engineer
- Controls Engineer
- Electrical Design Engineer
- Electronics Engineer
- Power Systems Engineer
- Robotics Engineer
- Telecommunications Engineer
- Test Engineer