Engineering Pre-Major - Mechanical Engineering Subplan

Associate in Engineering Science Degree (AES1)

swic.edu/engineering

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Mechanical Engineering is a versatile and wide-ranging field focused on the design, analysis, and development of systems involving motion, energy, and force to create and improve machines and devices. It combines core principles from physics, mathematics, and materials science to solve real-world engineering challenges and drive innovation across industries. This program subplan provides a strong foundation in fundamental areas such as mechanics, dynamics, thermodynamics, materials science, structural analysis, and electrical systems. Graduates are well-prepared to pursue a Bachelor's degree in Mechanical Engineering—contributing to the technologies and infrastructure that shape everyday life.

Articulation Agreements

- SIU-Carbondale – B.S. Mechanical Engineering
- SIU-Edwardsville – B.S. Mechanical 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 Mechanical 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	210	Computer Programming for Engineers* OR	
General Education Selection			3
PHYS	205	Physics - Heat, Elec. & Magnetism*	4
ENGR	263	Analytical Mechanics-Statics*	3
ENGR	103	Engineering Graphics	4
Total Semester Credits			**18**

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Second Year			
Spring Semester			**Semester Credits**
MATH	290	Differential Equations*	3
ENGR	264	Analytical Mechanics-Dynamics* OR	
PHYS	206	Physics-Light & Modern Physics*	3-4
ENGR	271	Electrical Circuits* OR	
PHYS	206	Physics-Light & Modern Physics*	3-4
ENGR	275	Mechanics of Solids* OR	
BIOL	100	Introduction to Biology OR	
BIOL	101	Principles of Biology I OR	
BIOL	107	Human Genetics OR	
CHEM	106	General Chemistry II*	3-5
ECON	201	Principles of Macroeconomics OR	
ECON	202	Principles of Microeconomics OR	
POLS	150	Introduction to American Government	3
Total Semester Credits			**15-19**
Total Credits			**64-68**

Career Opportunities

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

- Engineering Technician
- CAD Technician or Draftsman
- Mechanical Designer
- Quality Assurance Technician

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

- Automotive Engineer
- Construction Engineer
- HVAC Engineer
- Mechanical Design Engineer
- Piping Engineer
- Robotics Engineer
- Structural Engineer
- Thermal Systems Engineer