

Engineering Pre-Major - Civil Engineering Subplan

Associate in Engineering Science Degree (AES1)

swic.edu/engineering

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One of the oldest and broadest engineering fields, Civil Engineering focuses on the design, construction, and maintenance of the physical and natural environment. It includes public and private infrastructure such as roads, bridges, buildings, dams, airports, pipelines, railways, and water and sewage systems. Drawing on mathematics, physics, materials science, and environmental studies, civil engineering applies scientific methods to create safe, sustainable, and efficient structures and systems. This program subplan provides a strong foundation in fundamental areas such as mathematics, physics, mechanics, dynamics, and materials. Graduates who go on to pursue a Bachelor's degree will be well prepared to learn to plan, design, and manage projects from concept to completion, ensuring they meet technical, social, and environmental standards.

Articulation Agreements

- SIU-Carbondale – B.S. Civil Engineering
- SIU-Edwardsville – B.S. Civil 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 Civil 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
ENGR 103	Engineering Graphics	4
Total Semester Credits		17

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
Human Relations Selection		3
Total Semester Credits		18

Second Year

Fall Semester		Semester Credits
MATH 205	Analytic Geometry & Calculus III*	4
MATH 210	Computer Programming for Engineers*	3
PHYS 205	Physics - Heat, Elec. & Magnetism*	4
ENGR 263	Analytical Mechanics-Statics*	3
ECON 201	Principles of Macroeconomics OR	
ECON 202	Principles of Microeconomics OR	
POLS 150	Introduction to American Government	3
Total Semester Credits		17

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Second Year

Spring Semester		Semester Credits
MATH 290	Differential Equations* OR	
PHYS 206	Physics-Light & Modern Physics*	3-4
ENGR 264	Analytical Mechanics-Dynamics*	3
ENGR 275	Mechanics of Solids*	3
ENGR 251	Surveying Fundamentals	3
BIOL 100	Introduction to Biology OR	
BIOL 101	Principles of Biology I OR	
BIOL 107	Human Genetics OR	
CHEM 106	General Chemistry II OR	
ES 102	Physical Geology	3-5
Total Semester Credits		15-18
Total Credits		67-70

Career Opportunities

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

- Engineering Technician
- CAD Technician
- Engineering Apprentice
- Land Surveyor

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

- Construction engineer
- Design engineer
- Environmental engineer
- Geotechnical engineer
- Marine engineer
- Structural engineer
- Transportation engineer
- Water resource engineer