

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