

Engineering Pre-Major - Aerospace Engineering Subplan

Associate in Engineering Science Degree (AES1)

swic.edu/engineering

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Aerospace Engineering is a broad, interdisciplinary field, and aerospace engineers create highly complex systems that apply the laws of physics and mathematics to topics of analysis and design of aerospace vehicles, including aircraft, missiles, and spacecraft. Aerospace engineers work in private and government defense, private space exploration companies, and aircraft manufacturing to design innovative and practical solutions for aviation needs. This program subplan provides a strong foundation in fundamental areas such as mathematics, physics, mechanics, dynamics, materials, and electrical systems. Graduates who plan to go on to a Bachelor's degree in Aerospace Engineering will be well prepared to study aerodynamics, aircraft structures, flight dynamics and controls, and propulsion of aircraft and spacecraft.

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 Aerospace 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*	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 Mechanic-Dynamics* OR	
PHYS 206	Physics-Light & Modern Physics*	3-4
ENGR 275	Mechanics of Solids* OR	
General Education Selection		3
ENGR 271	Electrical Circuits OR	
General Education Selection*		3
ECON 201	Principles of Macroeconomics OR	
ECON 202	Principles of Microeconomics OR	
POLS 150	Introduction to American Government	3
Total Semester Credits		15-16
Total Credits		64-65

*Indicates courses that must be taken in order.

Career Opportunities

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

- Aerospace Technician
- Aircraft Mechanic
- CAD Technician
- Inspector and Compliance Officer

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

- Aerospace Engineer
- Aircraft and Spacecraft Design Engineer
- Avionics Engineer
- Design Engineer
- Electronics Engineer
- Flight Test Engineer
- Mechanical Engineer
- Structural engineer
- Systems Engineer