Engineering Pre-Major - Nuclear Engineering Subplan

Associate in Engineering Science Degree (AES1)

swic.edu/engineering

Coordinator/Faculty: Dr. Mark Patty, ext. 5608
Email: mark.patty@swic.edu
Dean: Dr. Kimberly Cherry Vogt, ext. 5050
Email: kimberly.cherryvogt@swic.edu

Nuclear engineers support safe and effective nuclear technologies by advancing reactor designs, enhancing safety practices, developing medical and industrial applications, enabling space and naval propulsion, and managing radioactive materials and waste. Major areas include nuclear power generation, radiation detection and measurement, health physics, nuclear security and nonproliferation, propulsion, and medical and industrial uses of radiation. 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 nuclear engineering will be well prepared to learn to analyze and design nuclear systems, understand radiation behavior, apply safety and regulatory frameworks, and use computational and experimental tools to solve engineering problems.

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 Nuclear 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
General Education Selection			3
Total Semester Credits			**17**

Apply for Graduation Now

Second Year			
Spring Semester			**Semester Credits**
MATH	290	Differential Equations*	3
ENGR	264	Analytical Mechanics-Dynamics*	3
ENGR	275	Mechanics of Solids	3
ENGR	271	Electrical Circuits* OR	
PHYS	206	Physics-Light & Modern Physics*	3-4
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			**63-64**

Career Opportunities

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

- Radiation protection apprentice
- Instrument and controls electronics technician apprentice
- Nuclear welder
- Nuclear electrician

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

- Atomic process engineer
- Control and instrument engineer
- Materials engineer
- Nuclear radiation engineer
- Nuclear medicine technologist
- Nuclear safety engineer
- Nuclear steam supply system engineer
- Nuclear weapons engineer
- Radiation engineer
- Reactor engineer