Science and Engineering Technology, AS

Return to: Programs of Study

Purpose

The Associate in Science (AS) in Science and Engineering Technology program offers a sequence of courses that presents coherent and rigorous content needed to prepare for employment and/or promotion in occupations where a general knowledge of scientific and/or engineering methodologies are required. It also prepares students for entry into a variety of baccalaureate degree programs in related disciplines such as Biological Sciences, Engineering, Chemistry, Physics, and Environmental Science.

The content includes the communication and critical thinking skills essential for any employee, the fundamental procedures found in a scientific laboratory, and the scientific background of those procedures. Students will be able to specialize through program options in biological, chemical, environmental, and physical science, or may decide to study basic business concepts. Program electives support the students' studies (e.g. Trigonometry for those students wishing to take College Physics) and allow students to expand their understanding of other scientific disciplines.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours in the following areas: 18 credit hours of General Education Requirements, 15 credit hours of scientific and engineering Core Requirements, 15-19 credit hours of specialty Option coursework, and 12-16 credits hours of Technical Electives. The Scientific Workplace Preparation Certificate is a 26 credit hour certificate that prepares students for entry into employment and is comprised of core courses in the AS Science and Engineering Technology degree. As such, it can be earned before the student has earned the AS Science and Engineering Technology degree.

Course Prerequisites

Many courses require prerequisites. Check the description of each course in the list below to check for prerequisites, minimum grade requirements, and other restrictions related to the course. Students must complete all prerequisites for a course prior to registering for it.

Graduation

Students must fulfill all requirements of their program major in order to be eligible for graduation. Students must indicate their intention to attend commencement ceremony, by completing the Commencement Form by the published deadline.

General Education Requirements: 18 Credit Hours

- ENC 1101 - Composition I **3 credits**

- ENC 1102 - Composition II **3 credits**
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- SPC 1017 - Fundamentals of Speech Communication **3 credits**
- **or**
- SPC 2608 - Introduction to Public Speaking **3 credits**
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- Any General Education Humanities Course (PHI 2600 - Ethics is recommended) - **3 credits**
- Any General Education Mathematics Course (MAC 1105 - College Algebra or STA 2023 - Statistical Methods I recommended), minimum of **3 credits**
- Any General Education Social Sciences Course (ECO 2023 - Principles of Microeconomics recommended) - **3 credits**

Science and Engineering Technology, AS Degree Common Core Requirements: 15 Credit Hours

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- BSC 1010 - Biological Science I **3 credits**
- BSC 1010L - Biological Science I Laboratory **1 credit**
- CHM 2045 - General Chemistry I **3 credits**
- CHM 2045L - General Chemistry I Laboratory **1 credit**
- CHM 2046 - General Chemistry II **3 credits**
- CHM 2046L - General Chemistry II Laboratory **1 credit**
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- CGS 1000 - Computer Literacy **3 credits** (or CLEP CGS 1077-**3 transfer credits**)
- **or**
- CGS 1100 - Computer Applications for Business **3 credits**
- **or**
- Any computer course with a CGS, CIS, COP, or CTS prefix - **3 credits**

Laboratory Science Option: 18 - 20 Credit Hours

Complete 2 of the 3 science areas listed below

- **Biology**

- BSC 1011 - Biological Science II **3 credits**
- BSC 1011L - Biological Science II Laboratory **1 credit**
- Science coursework with BSC, MCB, OCB prefixes **or** Mathematics coursework with MAC prefix - **4 credits**
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Chemistry

- CHM 2210 - Organic Chemistry I **4 credits**
- CHM 2210L - Organic Chemistry I Laboratory **1 credit**
- CHM 2211 - Organic Chemistry II **4 credits**
- CHM 2211L - Organic Chemistry II Laboratory **1 credit**
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Physics

- PHY 2048 - General Physics I **4 credits**
- PHY 2048L - General Physics I Laboratory **1 credit**
- PHY 2049 - General Physics II **4 credits**
- PHY 2049L - General Physics II Laboratory **1 credit**
- **or**
- PHY 2053 - College Physics I **4 credits**
- PHY 2053L - College Physics I Laboratory **1 credit**
- PHY 2054 - College Physics II **4 credits**
- PHY 2054L - College Physics II Laboratory **1 credit**

Biomedical Science Option: 15 Credit Hours

- BSC 1085C - Anatomy and Physiology I **4 credits**
- BSC 1086C - Anatomy and Physiology II **4 credits**

- MCB 2010C - Microbiology **4 credits**
- HUN 1201 - Human Nutrition **3 credits**

Environmental Science Option: 17 Credit Hours

- BSC 1011 - Biological Science II **3 credits**
- BSC 1011L - Biological Science II Laboratory **1 credit**
- EVR 1001C - Introduction to Environmental Science **3 credits**
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- OCB 1000 - The Living Ocean **3 credits**
- **or**
- OCE 1001 - Introduction to Oceanography **3 credits**
- or
- OCE 1013C – Introduction to Marine Science 3 credits
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- BSC 1051C - Environmental Biology: Southwest Florida Ecosystems **3 credits**
- OCB 2010 - Marine Biology **3 credits**
- OCB 2010L - Marine Biology Laboratory **1 credit**

Engineering Option: 19 Credit Hours

- EGS 1001 - Introduction to Engineering **3 credits**
- EGN 2312 - Engineering Mechanics - Statics (With Vectors) **3 credits**
- EGN 2322 - Engineering Mechanics - Dynamics **3 credits**
- PHY 2048 - General Physics I **4 credits**
- PHY 2048L - General Physics I Laboratory **1 credit**
- PHY 2049 - General Physics II **4 credits**
- PHY 2049L - General Physics II Laboratory **1 credit**

Scientific Business Option: 15 Credit Hours

- ACG 2011 - Financial Accounting II **3 credits**
- **or**
- ACG 2021 - Financial Accounting **3 credits**
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- ACG 2071 - Managerial Accounting **3 credits**
- ECO 2023 - Principles of Microeconomics **3 credits**
- MAN 2021 - Management Principles **3 credits**
- MAR 2011 - Marketing **3 credits**

Technical Electives: 11 - 16 Credit Hours

Courses from any of the Options above as well as:

- ACG 1001 - Financial Accounting I **3 credits**
- AST 2002C - Astronomy **3 credits**
- BSC 1005 - General Biology **3 credits**
- BSC 1005L - General Biology Lab **1 credit**
- CHM 1020C - Chemistry for a Sustainable Future **4 credits**
- CHM 2025 - Introduction to College Chemistry **3 credits**
- CHM 2025L - Introduction to College Chemistry Laboratory **1 credit**
- ESC 1000C - Introduction to Earth Science **3 credits**
- ECO 2013 - Principles of Macroeconomics **3 credits**
- GIS 1040 - Geographic Information Systems (GIS) **3 credits**
- GIS 1045 - Geographic Information Systems (GIS) Customization **3 credits**
- GLY 1010C - Physical Geology **3 credits**
- GLY 1100C - Historical Geology **3 credits**
- HSC 1531 - Medical Terminology **3 credits**
- ISC 1001C - Foundations of Interdisciplinary Science I **3 credits**
- ISC 1002C - Foundations of Interdisciplinary Science II **3 credits**
- MAC 1105 - College Algebra **3 credits**

- MAC 1106 - Combined College Algebra/Pre-Calculus **5 credits**
- MAC 1114 - Trigonometry **3 credits**
- MAC 1140 - Pre-Calculus Algebra **3 credits**
- MAC 1147 - Pre-Calculus Algebra/Trigonometry **5 credits**
- MAC 2233 - Calculus for Business and Social Sciences I **4 credits**
- MAC 2311 - Calculus with Analytic Geometry I **4 credits**
- MAC 2312 - Calculus with Analytic Geometry II **4 credits**
- MAC 2313 - Calculus with Analytic Geometry III **4 credits**
- MAN 2582 - Principles of Project Management **3 credits**
- MAP 2302 - Differential Equations I **4 credits**
- MAT 1033 - Intermediate Algebra **4 credits**
- MAT 1100 - Mathematical Literacy for College Students **4 credits**
- PHY 1020C - Fundamentals of the Physical World **3 credits**
- SLS 1515 - Cornerstone Experience **3 credits**
- STA 2023 - Statistical Methods I **3 credits**

Total Degree Requirements: 64 Credit Hours

Information is available online at: www.fsw.edu/academics or on the School of Pure and Applied Sciences Home Page at: www.fsw.edu/sopa

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