# **Science and Engineering Technology, AS**

**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 is 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.

Program content includes communication and critical thinking skills essential for any employee, fundamental scientific laboratory procedures, and the scientific background of those procedures.  Students will be able to specialize by selecting recommended courses in biological, health, or environmental sciences; engineering technology, or geotechnology.  Program electives support these pathways 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: 26 credit hours of General Education Requirements, 18-38 credit hours of Program Requirements, and 0-20 credits hours of Electives. The Scientific Workplace Preparation College Credit Certificate (CCC) 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 for prerequisites, minimum grade requirements, and other restrictions. Students must complete all prerequisites for a course prior to registering for it.

**Graduation**

Students must fulfill all requirements of their program 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: 26 Credit Hours**

* [ENC 1101 - Composition I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **3 credits**
* [ENC 1102 - Composition II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **3 credits**
* [SPC 1017 - Fundamentals of Communication](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) Studies **3 credits**

**OR**

[SPC 2608 - Introduction to Public Speaking](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **3 credits**

* General Education Core Humanities **3 credits**
* General Education Core Mathematics (Recommended:[MAC 1105](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872" \l "tt4345" \t "_blank) or STA 2023STA 2023) **3 credits**
* General Education Core Social Sciences (Students required by F.A.C. 6A-10.02413 to demonstrate Civic Literacy should take AMH 2020 or POS 2041) **3 credits**
* CHM 2045 - General Chemistry I **3 credits**

**AND**

* [CHM 2045L - General Chemistry I Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **1 credit**
* [CHM 2046 - General Chemistry II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **3 credits**

**AND**

* [CHM 2046L - General Chemistry II Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **1 credit**

**Program Requirements 18 – 38 Credit Hours**

**Select a minimum of 18 credit hours from the following courses based upon career interest and/or future degree requirements.**

* [BSC 1010 – General Biology I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1, 4 **3 credits**

**AND**

* [BSC 1010L – General Biology I Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1, 4 **1 credit**
* [BSC 1011 – General Biology II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1**,** 4 **3 credits**

**AND**

* [BSC 1011L – General Biology II Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1**,** 4 **1 credit**
* [CHM 2210 - Organic Chemistry I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **4 credits**

**AND**

* [CHM 2210L - Organic Chemistry I Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **1 credit**
* [CHM 2211 - Organic Chemistry II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **4 credits**

**AND**

* [CHM 2211L - Organic Chemistry II Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **1 credit**
* [PHY 2053 - College Physics I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **4 credits**

**AND**

* [PHY 2053L - College Physics I Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **1 credit**
* [PHY 2054 - College Physics II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **4 credits**

**AND**

* [PHY 2054L - College Physics II Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 1 **1 credit**
* [PHY 2048 - General Physics I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **4 credits**

**AND**

* [PHY 2048L - General Physics I Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **1 credit**
* [PHY 2049 - General Physics II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **4 credits**

**AND**

* [PHY 2049L - General Physics II Laboratory](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **1 credit**
* [EGS 1001 - Introduction to Engineering](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **3 credits**
* [MAC 2311 - Calculus with Analytic Geometry I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **4 credits**
* [MAC 2312 - Calculus with Analytic Geometry II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **4 credits**
* [MAC 2313 - Calculus with Analytic Geometry III](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872)2 **4 credits**
* [MAP 2302 - Differential Equations I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 2 **4 credits**
* [BSC 1085C - Anatomy and Physiology I](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 3 **4 credits**
* [BSC 1086C - Anatomy and Physiology II](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) [3](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) **4 credits**
* [MCB 2010C - Microbiology](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 3 **4 credits**
* [HUN 1201 - Human Nutrition](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 3 **3 credits**
* DEP 2004 - Lifespan Development 3 **3 credits**
* [EVR 1001C - Introduction to Environmental Science](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 4, 5 **3 credits**
* [GLY 1010C - Physical Geology](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 4, 5 **3 credits**
* [ECO 2013 - Principles of Macroeconomics](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 4, 5 **3 credits**
* OCE 1013C - Marine Science 5 **3 credits**
* [BSC 1051C - Environmental Biology: Southwest Florida Ecosystems](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 5 **3 credits**
* [GIS 1040 - Geographic Information Systems (GIS)](http://catalog.fsw.edu/preview_program.php?catoid=13&poid=999&returnto=872) 5 **3 credits**

1 recommended for students planning on a biological science career or baccalaureate degree

2 recommended for students planning on an engineering technology career or baccalaureate degree

3 recommended for students planning on a health science career or baccalaureate degree

4 recommended for students planning on an environmental science career or baccalaureate degree

5 recommended for students planning on a geotechnology career or related baccalaureate degree

**Electives: 0 - 20 Credit Hours**

To complete the 64 credits required for this program, select any 1000-2000 level courses with the following prefixes: AST, BSC, CHM, CGS, ESC, GIS, GLY, HUN, HSC, ISC, MAC, OCB, OCE, PHY, or STA.

Electives may include SLS 1515 to satisfy College Graduation Requirements.

**Total Degree Requirements: 64 Credit Hours**

**Information is available online at:[www.fsw.edu/academics](http://www.fsw.edu/academics%22%20%5Ct%20%22_blank)** **or on the School of Pure and Applied Sciences Home Page at:** [www.fsw.edu/sopa](http://www.fsw.edu/sopa)

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