

Pre-Engineering Program Map: AA/AS Dual Degree



**Academic
& Career
Pathways**
Florida SouthWestern State College

Example Course Sequence

AA/AS Dual Degree

PRE-ENGINEERING

CATALOG YEAR 2025-2026

SCIENCE, ENGINEERING & MATH PATHWAY

This map is for students earning both the Associate in Arts (General Studies) and Associate in Science (Science & Engineering Technology) degrees. Completing both degrees together helps you meet prerequisite and general education requirements to transfer to a Florida public school for a Bachelor's degree in this major. Classes with the symbol help you explore this pathway.



Get to graduation sooner!

Take the AAF Math Placement Test at FSW Testing to see if you qualify for a fast track through your math courses!

Sample Questions:



Schedule Your Test:



Semester 1

Course	Credits	Notes
SLS 1515	CORNERSTONE EXPERIENCE	3
ENC 1101*	COMPOSITION I	3
CHM 2025	INTRO TO COLLEGE CHEMISTRY	3
CHM 2025L	INTRO TO COLLEGE CHEMISTRY LAB	1
MAC 1106	COLLEGE ALGEBRA/PRECALCULUS	4
Total Semester Credits:		14

Semester 2

Course	Credits	Notes
MAC 1114	TRIGONOMETRY	4
ENC 1102*	COMPOSITION II	3
CHM 2045	GENERAL CHEMISTRY I	3
CHM 2045L	GENERAL CHEMISTRY I LAB	1
EGS 1001	INTRODUCTION TO ENGINEERING	3
Total Semester Credits:		14

Semester 3

Course	Credits	Notes
MAC 2311	CALCULUS W/ANALYTIC GEOMETRY I	4
HUMANITIES*	ANY WRIT. INTENS. CORE HUMANITIES	3
Total Semester Credits:		7
Total Academic Year Credits:		35

Semester 4

Course	Credits	Notes
MAC 2312	CALCULUS W/ANALYTIC GEOMETRY II	4
PHY 2048	GENERAL PHYSICS I	4
PHY 2048L	GENERAL PHYSICS I LAB	1
SOCIAL SCI. / CIVIC LIT.	CHOOSE AMH 2010, AMH 2020, OR POS 2041	3
Total Semester Credits:		12

Engineering is a broad pathway, with many different sub-categories. Please refer to your future institution's program page or catalog to understand the prerequisites for the specific type of engineering you intend to pursue.



PRE-ENGINEERING PROGRAM MAP

Example Course Sequence

Semester 5			
Course		Credits	Notes
IDS 2891	CREATIVE CAPSTONE	3	
PHY 2049	GENERAL PHYSICS II	4	
PHY 2049L	GEN PHYSICS II LAB	1	
HUMANITIES	ANY GEN. ED. HUMANITIES	3	
SOCIAL SCIENCE*	ANY WRITING INTENS. SOCIAL SCIENCE	3	
Total Semester Credits:		14	
Semester 6			
Course		Credits	Notes
MAC 2313	CALCULUS W/ANALYTIC GEOMETRY III	4	SOME ENGINEERING MAJORS REQUIRE STA 2023 INSTEAD. TALK TO YOUR ADVISOR.
MAP 2302	DIFFERENTIAL EQUATIONS I	4	
Total Semester Credits:		8	
Total Academic Year Credits:		34	
Overall Credits:		69	

See important notes on Page 3

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Florida SouthWestern State College

SCIENCE, ENGINEERING & MATH PATHWAY

Transfer Worksheet

AA/AS Dual Degree

PRE-ENGINEERING

CATALOG YEAR 2025-2026

Common Prerequisites & FSW Recommended Courses		Credits	Semester	Example Transfer Requirements**			
				Florida Gulf Coast University	University of Florida	University of South Florida	Other Transfer School:
FSW Cornerstone Experience and Creative Capstone							
SLS 1515	CORNERSTONE EXPERIENCE	3		X	X	X	X
IDS 2891	CREATIVE CAPSTONE	3		X	X	X	X
Communication							
ENC 1101*	COMPOSITION I	3		X	X	X	
ENC 1102*	COMPOSITION II	3		X	X	X	
Humanities							
HUMANITIES*	ANY WRITING INTENS. CORE HUMANITIES	3		X	X	X	
HUMANITIES	ANY GEN. ED. HUMANITIES	3		X	X	X	
Social Science							
CIVIC LIT.	CHOOSE AMH 2010, AMH 2020, OR POS 2041	3		X	X	X	
SOCIAL SCI*	ANY WRITING INTENS. SOCIAL SCIENCE	3		X	X	X	
Mathematics							
MAC 1106	COLLEGE ALGEBRA/PRECALCULUS	4		X	X	X	
MAC 1114	TRIGONOMETRY (MAY NEED MAC 1114 & MAC 1140)	4		X	X	X	
Natural Science							
CHM 2025	INTRO TO COLLEGE CHEMISTRY (SEE ADVISOR)	3		X	X	X	
CHM 2025L	INTRO TO COLLEGE CHEM. LAB (SEE ADVISOR)	1		X	X	X	
CHM 2045	GENERAL CHEMISTRY I	3		X	X	X	
CHM 2045L	GENERAL CHEMISTRY I LAB	1		X	X	X	
Electives / Gen. Ed. Flex							
EGS 1001	INTRODUCTION TO ENGINEERING	3		X	Alternate: Any AA Elective	Alternate: Any AA Elective	
MAC 2311	CALCULUS W/ANALYTIC GEOMETRY I	4		X	X	X	
MAC 2312	CALCULUS W/ANALYTIC GEOMETRY II	4		X	X	X	
MAC 2313	CALCULUS W/ANALYTIC GEOMETRY III	4		X†	X	X	
MAP 2302	DIFFERENTIAL EQUATIONS I	4		X	X	X	
PHY 2048	GENERAL PHYSICS I	4		X	X	X	
PHY 2048L	GENERAL PHYSICS I LAB	1		X	X	X	
PHY 2049	GENERAL PHYSICS II	4		X	X	X	
PHY 2049L	GENERAL PHYSICS II LAB	1		X	X	X	
Foreign Language, Dual Enrollment, and Other Requirements (If Needed)							
ENC 1130†	IMPROVING COL. WRITING (COUNTS AS ELECTIVE)	3		Notes: † Software Engineering or Biotechnology require STA 2023 instead of MAC 2313. Talk to your Advisor.	Notes: This is aligned with the 2025-26 UF Catalog. Admission and prerequisite requirements may change by the time you seek to enroll.	Notes: See USF catalog for grade and progression requirements. This is aligned with the 2025-26 USF Catalog. Admission and prerequisite requirements may change by the time you seek to enroll.	Notes:
MAT 0057†	MATH FOR COL. SUCCESS (DEVELOPMENTAL: DOES NOT COUNT AS ELECTIVE OR MATH)	4					
MAT 1033†	INTERMEDIATE ALGEBRA (MUST EARN A TO AVOID EXTRA PRE-REQS) (COUNTS AS ELECTIVE)	4					
MAC 1105†	COLLEGE ALGEBRA (IF LESS THAN A IN MAT 1033)	3					
MAC 1140†	PRE-CALC. ALGEBRA (IF MAC 1105 WAS NEEDED)	3					
Florida Civic Literacy Exam Requirement (FCLE) - Check if Satisfied				MHF 2191 (Mathematical Foundations) is not required for admission, but will be required to complete FGCU's Engineering Bachelor's Degrees. FSW students may take MHF 2191 as a transient student before transferring to FGCU. Talk to your Advisor.			
- Classes with the symbol help you explore this pathway. - Students must meet the Core, *Writing Intensive, Civic Literacy, Foreign Language, and College requirements in the FSW College Catalog. - Other classes may be used toward FSW degree requirements, but they might not meet the prerequisite and transfer requirements for your intended Bachelor's degree. - To maintain timely graduation, it is highly recommended that you complete all common prerequisite course work prior to being admitted into a Bachelor's degree program. Some institutions may require that all prerequisites be completed before acceptance into the major. - Total credits for graduation may exceed the numbers indicated. - Your Student Success Advisor can help you make a personalized plan. www.fsw.edu/advising ** The prerequisites for General Biology (BSC 1010/L) are (demonstration of readiness for college-level computation and communication) and (BSC 1005 or 1 credit of high school biology) with a "C" or better.= † Only take this class if required by test scores or other college placement requirements. Updated 10/25				This is aligned with the 2025-26 FGCU Catalog. Admission and prerequisite requirements may change by the time you seek to enroll.			

Note About All University Engineering Programs: Engineering is a broad pathway, with many different sub- categories. Different types of engineering may have additional prerequisites. Please refer to your future institution's program page or catalog to understand the prerequisites of the specific type of engineering you intend to pursue.

****IMPORTANT:** Schools may have additional transfer requirements not listed here, and prerequisite course requirements can change without notice. Always confirm transfer requirements directly with your destination schools and plan carefully and frequently with your Academic Advisor.