

CIVIL ENGINEERING (B.S.C.E.)

Civil Engineering concerns the study of the conception, design, construction, and maintenance of large public and private projects. Civil engineers are responsible for creating sustainable infrastructure that ensures the safety and welfare of the public.

The Bachelor of Science in Civil Engineering (B.S.C.E.) integrates core courses common across engineering programs as well as specialized courses in various technical areas including construction, geotechnical, structural, transportation, water resources and others. The program employs a team-based active learning philosophy that provides students with critical thinking skills required for effective and innovative engineering practice.

Program Progression and Additional Graduation Requirements

Students admitted to FGCU as a degree seeking student in good academic standing may declare a major in engineering. All engineering majors must satisfy the academic milestones as described in the student guidebook. Refer to the Civil Engineering (B.S.C.E.) Student Guidebook for further information on milestones.

In addition to the program requirements, students must:

- Complete a minimum of 124 credits.
- Complete a minimum of 48 of the 124 credits at the upper division (3000-4999 level).
- Earn a cumulative GPA of 2.0 for all coursework attempted at FGCU.
- Satisfy the College-Level Skills and foreign language entrance requirements.
- Satisfy the Service-Learning requirement.
- Satisfy the Civic Literacy requirement.
- Satisfy the residency requirement: 30 of the last 60 credits, including 12 credits in the major must be completed at FGCU. Also, CGN 4802 Civil Engin Senior Design and ENV 4612C Sustainability in Engineering must be taken at FGCU. ENV 4612C Sustainability in Engineering will satisfy the SCGR Requirement.
- Complete the summer course enrollment requirement.
- Submit an application for graduation by the deadline listed in the FGCU Academic Calendar.

Program Requirements

Code	Title	Credits
FGCU General Education Program (https://www.fgcu.edu/academics/undergraduatestudies/generaleducation/)		

To prevent or minimize excess hours, select general education courses that satisfy common prerequisite requirements for your intended major.

Common Prerequisites

For this major, common prerequisite courses with an asterisk (*) require prior knowledge and skills demonstrated through degree acceleration programs (e.g., the College Board's Advanced Placement Program [AP], International Baccalaureate Program [IB], College-Level Examination Program [CLEP], Advanced International Certificate of Education Program [AICE]); dual enrollment; placement exam; or college coursework.

A minimum grade of C is required in each course

CHM 1045 & 1045L	General Chemistry I and General Chemistry I Laboratory (Acceptable Substitute: (CHMX045 and CHMX045L) or CHMX045C or (CHSX440 and CHSX440L)) ^{*,1}	4
MAC 2311	Calculus I (Acceptable Substitute: MACX311 or MACX281) ^{*,2}	4
MAC 2312	Calculus II (Acceptable Substitute: MACX312 or MACX282)	4
MAC 2313	Calculus III (Acceptable Substitute: MACX313 or MACX283)	4
MAP 2302	Differential Equations (Acceptable Substitute: MAPX302 or MAPX305)	3
PHY 2048 & 2048L	General Physics I and General Physics I Laboratory (Acceptable Substitute: (PHYX048 and PHYX048L) or PHYX048C or (PHYX041 and PHYX048L))	4
PHY 2049 & 2049L	General Physics II and General Physics II Laboratory (Acceptable Substitute: (PHYX049 and PHYX049L) or PHYX049C or (PHYX044 and PHYX049L) or (PHYX042 and PHYX049L))	4

Engineering Common Core (10 credits)

A minimum grade of C is required in each course		
EGM 3420C	Engineering Mechanics	4
EGN 1041C	Computational Tools for Eng	2
EGN 3441C	Data Sci & Eng Sys Analysis	3
EGS 1006L	Intro to the Engineering Prof.	1

Required Courses in the Major (42 credits)

A minimum grade of C is required in each course except CGN 4802		
CCE 3101C	Civil Engineering Materials	3
CCE 4031C	Project Planning & Regulations	3
CEG 3011C	Geotechnical Engineering I	3
CES 3100C	Structural Analysis	3
CGN 3323C	Surveying and Geomatics	3
CGN 4802	Civil Engin Senior Design (capstone)	3
CWR 3201C	Engineering Fluid Mechanics	3
CWR 3202C	Hydrology and Hydraulics	3
CWR 4540C	Water Resources Design	3
EGN 2111C	Engineering Computer Graphics	3
EGN 3331C	Mechanics of Materials	3
ENV 3006C	Fundamentals of Environ Engrg	3
ENV 4612C	Sustainability in Engineering	3
TTE 3002C	Transportation Engineering	3

Restricted Electives in the Major (12 credits)

A minimum grade of C is required in each course		
Complete one from the following:		
CES 4605C	Steel Design ³	3
CES 4702C	Reinforced Concrete Design ³	3
Complete one from the following:		
CCE 4204C	Construction Methods & Managmt ³	3
CEG 4012C	Geotechnical Engineering II ³	3

Complete two from the following:

Must be approved by the Academic Unit housing the degree program or major.

CCE 4204C	Construction Methods & Managmt ³	3
CEG 4012C	Geotechnical Engineering II ³	3
CES 4605C	Steel Design ³	3
CES 4702C	Reinforced Concrete Design ³	3
CGN 4321C	GIS in Civil and Environmental	3
EES 3204C	Environ Chem for Engineers	3
EES 4102C	Wastewater Microbiology	3
EGN 3060C	Intro to Mechatronic Design	3
EGN 3343C	Thermodynamics	3
EML 3416	Science & Tech of Solar Energy	3
ENV 3502C	Water Treatment Engineering	3
ENV 4101C	Atmospheric Pollution	3
ENV 4341C	Solid & Hazardous Waste Mgmt	3
ENV 4509C	Wastewater Engineering	3

Other courses may be taken with departmental approval

Sustainability Course Graduation Requirement (3 credits)

Select at least 3 credits in sustainability coursework (SCGR Attribute)

Additional Electives

As needed to reach total credits required for the degree

Recommended options include: ECO 2013, ECO 2023, ENC 3250, MAN 2062, MAN 3025, MAS 3105, and MAP 3161

¹ Prerequisites of MAT 1033 Intermediate Algebra minimum grade of C then MAC 1105 College Algebra minimum grade of C; or relevant accelerated credit; or placement exam

² Prerequisites of MAT 1033 Intermediate Algebra minimum grade of C then MAC 1105 College Algebra minimum grade of C then MAC 1147 Precalculus minimum grade of C; or relevant accelerated credit; or placement exam

³ Courses used to satisfy one elective category cannot be used to satisfy another elective category.

Total Credits Required: 124