ENVIRONMENTAL ENGINEERING (B.S.ENV.E.)

Environmental Engineering involves the application of engineering principles to the design and development of systems, processes, and tools needed for the protection of the environment, human health, and ecosystems in order to maintain a sustainable world. The Bachelor of Science in Environmental Engineering (B.S.Env.E.) emphasizes both anthropogenic and natural environments with focus on the core competency areas of drinking water and wastewater treatment, water resources engineering, solid and hazardous waste management, air and water quality control and renewable and sustainable technologies. This program employs a team-based interdisciplinary learning philosophy. This approach provides students with knowledge for leadership in sustaining our world and with the critical thinking skills required for effective and innovative engineering practice with particular emphasis on solving problems related to water, soil, and air pollution and resource recovery and re-use. B.S.Env.E. students complete core courses common to the other engineering majors as well as specialized courses in environmental engineering.

The mission of the B.S.Env.E. degree program is to:

- Produce graduates broadly educated in engineering approaches to problem identification and problem solving for a sustainable future for South Florida and beyond
- Prepare leaders for the Environmental Engineering and related professions, professional licensure and practice, graduate and professional degrees and lifelong learning
- Provide an interdisciplinary, student-centered learning environment that values service for our community, celebrates diversity, fosters creativity and innovation, instills ethical practice, advances sustainable solutions and trains students in collaborative and professional approaches to work effectively across engineering disciplines

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 B.S.Env.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, ENV 4612C Sustainability in Engineering and ENV 4891 Envir Engr Senior Design 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
CHM 1046 & 1046L	General Chemistry II and General Chemistry II Lab (Acceptable Substitute: (CHMX046 and CHMX046L) or CHMX046C)	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)	4
PHY 2049 & 2049L	General Physics II and General Physics II Laboratory (Acceptable Substitute: (PHYX049 and PHYX049L) or PHYX049C or (PHYX044 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		**(48 credits)**
A minimum grade of C is required in each course		
CCE 4031C	Project Planning & Regulations	3

CGN 4321C	GIS in Civil and Environmental	3
CWR 3201C	Engineering Fluid Mechanics	3
CWR 3202C	Hydrology and Hydraulics	3
CWR 4540C	Water Resources Design	3
EES 3204C	Environ Chem for Engineers	3
EES 4102C	Wastewater Microbiology	3
EGN 2111C	Engineering Computer Graphics	3
EGN 3343C	Thermodynamics	3
ENV 3006C	Fundamentals of Environ Engrg	3
ENV 3502C	Water Treatment Engineering	3
ENV 4101C	Atmospheric Pollution	3
ENV 4341C	Solid & Hazardous Waste Mgmt	3
ENV 4509C	Wastewater Engineering	3
ENV 4612C	Sustainability in Engineering	3
ENV 4891	Envir Engr Senior Design (capstone)	3
Restricted Electives in the Major		**(6 credits)**
Complete one from the following:		
GLY 1010C	Physical Geology	4
GLY 2030C	Environmental Geology	3
GLY 4074C	Meteorology & Climatology	3
Complete one from the following:		3
Any ENV, EES, CEG, CWR, CES, EVS, TTE prefix Engineering course or, with approval of the Academic Unit housing the degree program or major, any other course in math, science or related field with majority technical content relevant to the Environmental Engineering major.		
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		

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

Total Credits Required: 124