



## **Environmental Engineering (B.S.Env.E.)**

**U.A. Whitaker College of Engineering**

**Department of Environmental and Civil Engineering**

<https://www.fgcu.edu/eng/environmental-civil/enve-bs.aspx>  
(239) 590-7390

**20182019-2019-2020 Catalog Year**

GLY 1000C is being replaced by GLY 1010C Physical Geology for the proposed program Environmental Geology B.S. In anticipation of this new program's approval, the catalog copies for affected majors have been prepared by ACS as informational items for the University Undergraduate Curriculum Team.

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 municipal, natural, and industrial environments with focus on the core competency areas of water and wastewater treatment, water resources engineering, solid and hazardous waste management, air and water quality control and sustainability. 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 technologies needed to solve 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 Environmental Engineering Program of the Department of Environmental and Civil Engineering in the U.A. Whitaker College of Engineering at Florida Gulf Coast University will produce graduates who:

- Pursue lifelong learning through continuing education and/or advanced degrees in environmental engineering or other related fields,
- Progress to professional registration, and
- Continue to develop professionally through participation in professional organizations and/or participation in professional development activities in the industry.

### **Program Progression And Additional Graduation Requirements**

Students admitted to Florida Gulf Coast University 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 Environmental Engineering (B.S.Env.E.) Student Guidebook for further information on milestones.

- In addition to the program requirements, students must complete:
- A minimum of 128 credits.
- At least 48 of the 128 credits at the upper division (3000 and higher) level.
- A minimum of 32 of the last 60 credits to be taken at FGCU, including 12 credits in the major. Also, ENV 4891 must be taken at FGCU.
- A cumulative GPA of 2.0 for all coursework attempted at FGCU.
- Satisfaction of College-Level Skills and foreign language entrance requirements.
- Satisfaction of the Service Learning requirement. See [www.fgcu.edu/connect/](http://www.fgcu.edu/connect/)

## **Program Requirements**

### **1. FGCU General Education**

**Program** ([https://www2.fgcu.edu/general\\_education/](https://www2.fgcu.edu/general_education/))

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

### **2. Common Program 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.

FGCU Course: \*CHM 1045 General Chemistry I (3) and CHM 1045L General Chemistry I Lab (1) Minimum grade of C

Acceptable Substitute: (CHMX045 and CHMX045L) or CHMX045C or (CHSX440 and CHSX440L)

[Prerequisites of MAT 1033 minimum grade of C then MAC 1105 minimum grade of C; or relevant accelerated credit; or placement exam]

FGCU Course: CHM 1046 General Chemistry II (3) and CHM 1046L General Chemistry II Lab (1) Minimum grade of C

Acceptable Substitute: (CHMX046 and CHMX046L) or CHMX046C

FGCU Course: \*MAC 2311 Calculus I (4) Minimum grade of C

Acceptable Substitute: MACX311 or MACX281

[Prerequisites of MAT 1033 minimum grade of C then MAC 1105 minimum grade of C then MAC 1147 minimum grade of C; or relevant accelerated credit; or placement exam]

FGCU Course: MAC 2312 Calculus II (4) Minimum grade of C  
Acceptable Substitute: MACX312 or MACX282

FGCU Course: MAC 2313 Calculus III (4) Minimum grade of C  
Acceptable Substitute: MACX313 or MACX283

FGCU Course: MAP 2302 Differential Equations (3) Minimum grade of C  
Acceptable Substitute: MAPX302 or MAPX305

FGCU Course: PHY 2048C General Physics w/Lab I (4) Minimum grade of C  
Acceptable Substitute: (PHYX048 and PHYX048L) or PHYX048C or (PHYX043 and PHYX048L)

FGCU Course: PHY 2049C Gen'l Physics w/Lab II (4) Minimum grade of C  
Acceptable Substitute: (PHYX049 and PHYX049L) or PHYX049C or (PHYX044 and PHYX049L)

### **3. Engineering Common Core (10 credits)**

A minimum grade of C is required in each course.

EGM 3420C Engineering Mechanics (4)  
EGS 1006L Intro to the Engineering Prof. (1)  
EGN 1041C Computational Tools for Eng (2)  
EGN 3641C Engineering Entrepreneurship (3)

### **4. Required Courses in the Major (48 credits)**

A minimum grade of C is required in each course.

CCE 4031C Project Planning & Regulations (3)  
CGN 3323C Surveying and Geomatics (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 3343C Thermodynamics (3)  
ENV 3006C Fundamentals of Environ Engrg (3)

ENV 3502C Water Treatment Engineering (3)  
ENV 4101C Atmospheric Pollution (3)  
ENV 4330C Hazardous Waste Remediation (3)  
ENV 4351C Solid Waste Management (3)  
ENV 4509C Wastewater Engineering (3)  
ENV 4612C Sustainability in Engineering (3)  
ENV 4891 Envir Engr Senior Design (3)

**5. Restricted Electives (6-7 credits)**

Select one of the following:

GLY ~~1000C~~ 1010C Physical Geology (4)  
GLY 2030C Environmental Geology (3)  
GLY 4074C Meteorology & Climatology (3)

Select one of the following:

Any ENV, EES, CEG, CWR, CES, EVS, TTE prefix Engineering course or, with approval of the advisor in consultation with the faculty, any other course with majority technical content relevant to the Environmental Engineering major, such as EVR 4034C Environmental GIS.

**6. University Requirements (3 credits)**

IDS 3920 University Colloquium (3)

**7. Additional Electives (as needed to reach total credits required for the degree)**

EGN 2111C Engineering Computer Graphics (3) is recommended.

**TOTAL CREDITS REQUIRED: 128**