

## BS in Environmental Engineering Curriculum

Eight Semester Sequence (126 credits)	
<b>First Semester (13)</b>	
MAC 2311 Calculus I	4
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry I Lab	1
SLS 1501 Freshman Experience	1
ENC 1101 Freshman Composition	3
EGN 2030 Ethics & Legal Aspects in Engineering	1
<b>Second Semester (17)</b>	
MAC 2312 Calculus II	4
ENC 1102 Literary Analysis	3
PHY 2048 Physics with Calculus I	5
PHY 2048L General Physics Laboratory I	1
EGN 1110C Engineering Drawing*	0
BSC 1010 General Biology I	3
BSC 1010/L General Biology Lab I	1
<b>Third Semester (18)</b>	
CHM 1046 General Chemistry II	3
CHM 1046L General Chemistry Lab II	1
PHY 2049 Physics with Calculus II	5
MAP 2302 Differential Equations	3
Humanities (with writing)	3
Societies and Identities (EGN 1033)	3
<b>Fourth Semester (18)</b>	
MAC 2313 Multivariable Calculus	4
ENV 3001 Introduction to Environmental Engineering	3
ENV 3001L Environmental Laboratory I	1
EGN 3311 Statics	3
Science Elective (Earth Science)**	4
STA 3033 Introduction to Probability and Statistics for CS or Equivalent	3
<b>Fifth Semester (18)</b>	
EGN 3343 Thermodynamics I	3
EGN 3321 Dynamics	3
EIN 3354 Engineering Economy	3
ENV 4513 Chemistry for Environmental Engineers	3
Foundations of Social Inquiry (ECO 2013 or ECO 2023)	3
Art (CRW 2001)	3
<b>Sixth Semester (17)</b>	
CWR 3201 Fluid Mechanics	3
CWR 3201L Fluid Mechanics Lab	1
EEL 3003 Electrical Engineering	3
ENV 4351 Solid Waste Management	3
Science Elective (Biological Science)**	4
Humanities/Historical	3
<b>Seventh Semester (13)</b>	
ENV 4101 Elements of Atmospheric Pollution	3
ENV 4401 Water Supply Engineering	3
ENV 4551 Sewerage and Wastewater Treatment	3
ENV 4XXXL Environmental Laboratory II	1
CWR 3103 Water Resources Engineering	3
<b>Eighth Semester (12)</b>	
ENV 4330 Hazardous Assessment and Remediation	3
ENV 4XXX Environmental Eng. Senior Design Project	3
ENV Technical Elective****	3
ENV Technical Elective****	3
<b>Total Credits</b>	<b>126</b>

Common courses with BS in Civil Engineering

- \* Required unless previously taken
- \*\* One Science Elective should be in Earth Sciences and the other should be in Biological Sciences. Electives must be selected from the following:

Earth Science electives (one required):

GLY 2072/L Earth's Climate and Global Change	4
GLY 3039/L Environmental Geology	4
GLY 3202/L Earth Materials	4
GLY 4822/L Hydrogeology	4
MET 2010/L Meteorology & Atmospheric Physics	4

Biological Science electives (one required):

MCB 2000/L Introductory Microbiology	4
OCB 2003/L Introductory Marine Biology	4
PCB 3043/L Ecology	4
EVR 3013/L Ecology of South Florida	4

- \*\*\*\* ENV technical electives must be selected from the following:

CEG 4011 Geotechnical Engineering	3
CGN 4321 GIS Applications in Civil and Env. Engineering	3
CWR 5235 Open Channel Hydraulics	3
CWR 5251 Environmental Hydraulics	3
ENV 4560 Reactor Design	3
ENV 4024 Bioremediation Engineering	3
ENV 4930 Special Topics in Environmental Engineering	3
ENV 5002C Fundamentals for Environmental Engineers	3
ENV 5126 Particulate Air Pollution Control	3
ENV 5127 Gaseous Air Pollution Control	3
ENV 5104 Indoor Air Quality	3
ENV 5666 Water Quality Management	3
EVR 3010 Energy Flow in Natural and Man-made Systems	3
EVR 4321 Sustainable Resource Development	3
EVR 4592 Soils and Ecosystems	3
EVR 4026 Ecology of Biotic Resources	3
EVR 4323 Restoration Ecology	3
PHC 5409 Public Health Behavior Change Theory and Practice	3
PHC 5415 Public Health in Minority/Urban Population	3

All recommended and other technical electives must be approved by the advisor and must concentrate on relevant applications of environmental engineering design. Selection of a proper sequence would allow the student to specialize within a focus area of interest (e.g., air, water, or land resources).

## BS IN ENVIRONMENTAL ENGINEERING

### Curriculum

**Total Number of Degree Program Credit Hours:**           **126 credit hours**

Common Prerequisites  
CHM 1045 General Chemistry I  
CHM 1045L General Chemistry Lab I  
MAC 2311 Calculus I  
MAC 2312 Calculus II  
MAC 2313 Multivariable Calculus  
MAP 2302 Differential Equations  
PHY 2048 Physics with Calculus  
PHY 2048L General Physics Lab I  
PHY 2049 Physics with Calculus II

The Environmental Engineering curriculum provides a background of interrelated subdisciplines of Environmental Engineering and related science subjects with the fundamental core subjects of the engineering program. The technical interdisciplinary courses are in the areas of biology, geology, chemistry, ecology, atmospheric sciences, geotechnical engineering, urban planning, water resources engineering, pollution prevention and waste management. Environmental engineers play an essential role in serving people and the environmental needs of society. These needs relate to water, air and development of land and physical facilities.

The academic program is designed to meet the State of Florida's articulation policy as well as to satisfy criteria outlined by the Accreditation Board for Engineering and Technology (ABET).

#### **Lower Division Preparation**

The lower division requirements include at least 60 semester hours of pre-engineering courses (as specified in the Undergraduate Studies portion of University catalog) which include the common prerequisites listed above. A minimum grade of "C" is required in all writing courses, and in of the common prerequisite courses listed above.

All students must comply with the University Core Curriculum Requirements for the University as well as comply with departmental requirements for Social Science, Humanities, and English. Students may find that some courses satisfy both requirements; therefore it is important to contact the department advisor for assistance. The department requires a minimum of 15 semester hours in the area of Humanities and Social Science.

In addition, all students must meet the University Foreign Language Requirement, must pass the CLAST or have it waived, must meet all of the state and university requirements for graduation.

## Upper Division Program

The upper division program of study encourages the development of a broadly educated environmental engineering graduate, who can succeed as a productive engineer with a continued professional growth. The courses listed as requirements for the BS degree not only provide the students with mathematical and scientific knowledge, but also include other essentials necessary for a successful engineering career. The courses have been designed to increase student competence in written and oral communication skills as well as develop critical thinking and creative problem solving strategies. Course projects are designed to teach engineering science fundamentals and their applications while providing enriching opportunities for laboratory and computer-based experiences. Furthermore, students are supplied with an understanding of the economic, social and ethical responsibilities of engineers in our society and are encouraged to include sustainable development in all project designs.

### Engineering Sciences (31)

BSC 1010 General Biology I or BSC 1011 General Biology II	3
BSC 1010L General Biology I Lab or BSC 1011L General Biology Lab II	1
STA 3311 Probability and Statistics or EIN 3235 Evaluation of Eng. Data	3
Science Elective (Biological Science)**	4
Science Elective (Earth Science)**	4
EGN 3311 Statics	3
EGN 3321 Dynamics	3
EGN 3343 Thermodynamics I	3
CWR 3201 Fluid Mechanics	3
CWR 3201L Fluid Mechanics Lab	1
EEL 3003 Electrical Engineering	3

### Environmental Engineering Curriculum (35)

CWR 3103 Water Resources Engineering	3
ENV 3001 Introduction to Environmental Engineering	3
ENV 3001L Environmental Laboratory I	1
ENV 4XXXL Environmental Laboratory II	1
ENV 4513 Chemistry for Environmental Engineers	3
ENV 4351 Solid Waste Management	3
ENV 4101 Elements of Atmospheric Pollution	3
ENV 4401 Water Supply Engineering	3
ENV 4551 Sewerage and Wastewater Treatment	3
ENV 4330 Hazardous Assessment and Remediation	3
ENV 4XXX Environmental Eng. Senior Design Project	3
ENV Technical Elective	3
ENV Technical Elective	3

## **Course & Credit Hours Listing**

The curriculum includes a sequence of courses which complies with the ABET requirements for mathematics and basic sciences, engineering science, engineering design, and general engineering degree requirements including humanities and social sciences. A typical eight semester sequence is shown below. In addition, an alternate nine-semester sequence is shown to illustrate the inclusion of one summer term (as required by State-law). Students may complete the program, by specific selection of science and technical elective courses, as arranged with the undergraduate program advisor and based on personal interests in a specialization area.