## **B.S. IN ENVIRONMENTAL ENGINEERING**

#### **Overview**

The Environmental Engineering curriculum provides an integrated educational experience in mathematics, basic sciences, humanities, social sciences, engineering sciences, and environmental engineering design. The first two years of the Environmental Engineering curriculum provide a strong foundation in mathematics, basic sciences, and engineering sciences. The next two years of the four-year program, integrate engineering sciences with design applications.

Design courses emphasize an integrated approach that considers all environmental media in the prevention and control of environmental problems. The curriculum culminates with a major senior-level design project that includes design applications from the major specialty areas of environmental engineering.

## **Curriculum Requirements**

Engineering Courses	Code	Title	Credit Hours
CET 300   Computational Methods for Engineers (Computational Methods for Engineers (NEW COURSE)	Engineering Courses		
Engineers (NEW COURSE)	EGN 114	Global Challenges Addressed by Engineering and Technology	3
CET 340         Introduction to Environmental Engineering         3           CET 345         Environmental Laboratory and Analysis 1         3           CET 403         Senior Design Project I - Engineering Design         3           CET 404         Senior Design Project II - Integrated Engineering Documents 1         3           CET 430         Water Quality Control Systems         3           CET 440         Water Quality Control Systems         3           CET 530         Water Resources Engineering II         3           CET 540         Environmental Chemistry         3           CET 540         Environmental Engineering Microbiology         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CAE 210         Mechanics of Solids 1         3           CAE 210         Mechanics of Solids 1         3           CAE 202         Professional Engineering Practice 1         3           SES 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Marine Atmospheric Science Elective         3           Marine Science Courses         MITH 151         Calculus II or Engineers 2	CET 300		3
CET 345         Environmental Laboratory and Analysis <sup>1</sup> 3           CET 403         Senior Design Project I - Engineering Design         3           CET 404         Senior Design Project II - Integrated Engineering Documents <sup>1</sup> 3           CET 430         Water-Resources Engineering I - Integrated Engineering Documents <sup>1</sup> 3           CET 440         Water Quality Control Systems         3           CET 530         Water Resources Engineering II         3           CET 533         Water Resources Engineering II         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 542         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CET 544         Environmental Engineering Microbiology         3           CAE 210         Mechanics of Solids I         3           CAE 210         Mechanics of Solids I         3           CAE 210         Professional Engineering Practice <sup>1</sup> 3           SES 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           MSC 301         Introduction to Phy	CET 330	Fluid Mechanics	3
CET 403         Senior Design Project I - Engineering Design         3           CET 404         Senior Design Project I - Integrated Engineering Documents <sup>1</sup> 3           CET 440         Water Resources Engineering I         3           CET 440         Water Quality Control Systems         3           CET 530         Water Resources Engineering II         3           CET 533         Water Quality Control in Natural Systems         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solds I         3           CAE 210         Mechanics of Solds I         3           CAE 210         Professional Engineering Practice I         3           SEC 205         Principles of Electrical Engineering -I         3           MAE 303         Thermodynamics         3           Technical Elective         3           Mariner/Archmospheric Science Elective         3           Mariner/Archmospheric Science Elective         3           MTH 151 <t< td=""><td>CET 340</td><td>Introduction to Environmental Engineering</td><td>3</td></t<>	CET 340	Introduction to Environmental Engineering	3
CET 404         Senior Design Project II – Integrated Engineering Documents <sup>1</sup> 3           CET 430         Water-Resources Engineering I         3           CET 440         Water Quality Control Systems         3           CET 530         Water Resources Engineering II         3           CET 533         Water-Quality Control in Natural Systems         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice <sup>1</sup> 3           ECE 205         Principles of Electrical Engineering—I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Technical Elective         3           MSS 301         Introduction to Physical Oceanography         3           MSG 303         Introduction to Physical Oceanography         3           MTH 151         Calculus II         4	CET 345	Environmental Laboratory and Analysis <sup>1</sup>	3
CET 430         Water-Resources Engineering I         3           CET 440         Water Quality Control Systems         3           CET 530         Water Resources Engineering II         3           CET 533         Water Quality Control in Natural Systems         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CET 543         Air Pollution Control Engineering         3           CET 543         Air Pollution Control Engineering         3           CET 543         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice I         3           ECE 205         Principles of Electrical Engineering Practice I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Technical Elective         3           MSC 301         Introduction to Physical Oceanography         3           Marine / Atmospheric Science Elective         3           MTH 151	CET 403	Senior Design Project I - Engineering Design	3
CET 440       Water Quality Control Systems       3         CET 530       Water Resources Engineering II       3         CET 533       Water-Quality Control in Natural Systems       3         CET 540       Environmental Chemistry       3         CET 541       Environmental Engineering Microbiology       3         CET 543       Air Pollution Control Engineering       3         CAE 115       Introduction to Engineering II: Geospatial Data (Surveying and GIS)       2         CAE 210       Mechanics of Solids I       3         CAE 402       Professional Engineering Practice I       3         ECE 205       Principles of Electrical Engineering-I       3         ISE 311       Applied Probability and Statistics       3         MAE 303       Thermodynamics       3         Marine Science Courses       3         MSC 301       Introduction to Physical Oceanography       3         Marine/Atmospheric Science Elective       3         Math and Science Courses       5         MTH 151       Calculus II for Engineers I       5         MTH 211       Calculus III       3         MTH 311       Introduction to Ordinary Differential Equations       3         PHY 222       University Physics I	CET 404	Senior Design Project II – Integrated Engineering Documents <sup>1</sup>	3
CET 530         Water Resources Engineering II         3           CET 533         Water-Quality Control in Natural Systems         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice I         3           ECE 205         Principles of Electrical Engineering—I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Marine Science Courses         ***           MSC 301         Introduction to Physical Oceanography         3           Marine Atmospheric Science Elective         3           MAth and Science Courses         ***           MTH 151         Calculus I for Engineers 2         5           MTH 162         Calculus II         4           MTH 211         Calculus III         3           MTH 321         University Physics I         3	CET 430	Water-Resources Engineering I	3
CET 530         Water Resources Engineering II         3           CET 533         Water-Quality Control in Natural Systems         3           CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           CET 543         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice I         3           ECE 205         Principles of Electrical Engineering—I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Marine Science Courses         ***           MSC 301         Introduction to Physical Oceanography         3           Marine Atmospheric Science Elective         3           MAth and Science Courses         ***           MTH 151         Calculus I for Engineers 2         5           MTH 162         Calculus II         4           MTH 211         Calculus III         3           MTH 321         University Physics I         3	CET 440	Water Quality Control Systems	3
CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           3         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice I         3           ECE 205         Principles of Electrical Engineering-I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Technical Elective         3           MSC 301         Introduction to Physical Oceanography         3           Marine/Atmospheric Science Elective         3           MATH 351         Calculus I for Engineers I         5           MTH 151         Calculus II         4           MTH 211         Calculus III         3           MTH 311         Introduction to Ordinary Differential Equations         3           PHY 221         University Physics I         3           PHY 222         University Physics I         3           PHY 106         Physics Laboratory I         1	CET 530	Water Resources Engineering II	
CET 540         Environmental Chemistry         3           CET 541         Environmental Engineering Microbiology         3           3         Air Pollution Control Engineering         3           CAE 115         Introduction to Engineering II: Geospatial Data (Surveying and GIS)         2           CAE 210         Mechanics of Solids I         3           CAE 402         Professional Engineering Practice I         3           ECE 205         Principles of Electrical Engineering-I         3           ISE 311         Applied Probability and Statistics         3           MAE 303         Thermodynamics         3           Technical Elective         3           MSC 301         Introduction to Physical Oceanography         3           Marine/Atmospheric Science Elective         3           MATH 351         Calculus I for Engineers I         5           MTH 151         Calculus II         4           MTH 211         Calculus III         3           MTH 311         Introduction to Ordinary Differential Equations         3           PHY 221         University Physics I         3           PHY 222         University Physics I         3           PHY 106         Physics Laboratory I         1	CET 533	Water-Quality Control in Natural Systems	3
CET 543 Air Pollution Control Engineering 3 CAE 115 Introduction to Engineering II: Geospatial Data (Surveying and GIS) 2 CAE 210 Mechanics of Solids I 3 CAE 402 Professional Engineering Practice 1 SCE 205 Principles of Electrical Engineering—I 3 ISE 311 Applied Probability and Statistics 3 MAE 303 Thermodynamics 3 Technical Elective 3 Marine Science Courses MSC 301 Introduction to Physical Oceanography 3 Marine/Atmospheric Science Elective 3 Math and Science Courses WH 151 Calculus I for Engineers 2 MTH 151 Calculus III 3 MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I 3 PHY 212 University Physics II 9 Physics Laboratory I 1 CHM 121 Principles of Chemistry Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	CET 540	Environmental Chemistry	
CAE 115 Introduction to Engineering II: Geospatial Data (Surveying and GIS) 2 CAE 210 Mechanics of Solids I 3 CAE 402 Professional Engineering Practice 1 3 ECE 205 Principles of Electrical Engineering—I 3 ISE 311 Applied Probability and Statistics 3 MAE 303 Thermodynamics 3 Technical Elective 3 Marine Science Courses MSC 301 Introduction to Physical Oceanography 3 Marine/Atmospheric Science Elective 3 Math and Science Courses MTH 151 Calculus I for Engineers 2 MTH 152 Calculus II 4 MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I 9 PHY 106 Physics Laboratory I 1 CHM 121 Principles of Chemistry Chemistry Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	CET 541	Environmental Engineering Microbiology	3
CAE 210       Mechanics of Solids I       3         CAE 402       Professional Engineering Practice I       3         ECE 205       Principles of Electrical Engineering-I       3         ISE 311       Applied Probability and Statistics       3         MAE 303       Thermodynamics       3         Technical Elective       3         Marine Science Courses       3         MSC 301       Introduction to Physical Oceanography       3         Marine/Atmospheric Science Elective       3         MTH 151       Calculus I for Engineers 2       5         MTH 162       Calculus II       4         MTH 211       Calculus III       3         MTH 311       Introduction to Ordinary Differential Equations       3         PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory 1       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements	CET 543	Air Pollution Control Engineering	
CAE 402 Professional Engineering Practice  Principles of Electrical Engineering—I 3 ECE 205 Principles of Electrical Engineering—I 3 ISE 311 Applied Probability and Statistics 3 MAE 303 Thermodynamics 3 Technical Elective 3 Marine Science Courses  MSC 301 Introduction to Physical Oceanography 3 Marine/Atmospheric Science Elective 3 Marth and Science Courses  MTH 151 Calculus I for Engineers  MTH 162 Calculus II 4 MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I 3 PHY 222 University Physics II 3 PHY 106 Physics Laboratory 1 1 CHM 121 Principles of Chemistry Laboratory 1 1 ECHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	CAE 115	Introduction to Engineering II: Geospatial Data (Surveying and GIS)	2
ECE 205 Principles of Electrical Engineering—I 3 ISE 311 Applied Probability and Statistics 3 MAE 303 Thermodynamics 3 Technical Elective 3 Marine Science Courses MSC 301 Introduction to Physical Oceanography 3 Marine/Atmospheric Science Elective 3 Math and Science Courses MTH 151 Calculus I for Engineers 2 MTH 151 Calculus II 4 MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I 3 PHY 222 University Physics I 3 PHY 106 Physics Laboratory 1 1 CHM 121 Principles of Chemistry 4 CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	CAE 210	Mechanics of Solids I	3
ECE 205 Principles of Electrical Engineering-I 3 ISE 311 Applied Probability and Statistics 3 MAE 303 Thermodynamics 3 Technical Elective 3 Marine Science Courses MSC 301 Introduction to Physical Oceanography 3 Marine/Atmospheric Science Elective 3 Math and Science Courses MTH 151 Calculus I for Engineers 2 MTH 151 Calculus II 4 MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I 3 PHY 222 University Physics II 3 PHY 106 Physics Laboratory 1 1 CHM 121 Principles of Chemistry 4 CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	CAE 402	Professional Engineering Practice <sup>1</sup>	3
MAE 303 Thermodynamics 3 Technical Elective 3  Marine Science Courses  MSC 301 Introduction to Physical Oceanography 3  Marine/Atmospheric Science Elective 3  Math and Science Courses  MTH 151 Calculus I for Engineers 2 5  MTH 162 Calculus II 4  MTH 211 Calculus III 3  MTH 311 Introduction to Ordinary Differential Equations 3  HHY 221 University Physics I 3  PHY 222 University Physics II 3  PHY 106 Physics Laboratory I 1  CHM 121 Principles of Chemistry 4  CHM 113 Chemistry Laboratory I 1  Biology Elective 3  General Education Requirements	ECE 205	Principles of Electrical EngineeringI	
MAE 303       Thermodynamics       3         Technical Elective       3         MSC 301       Introduction to Physical Oceanography       3         Marine/Atmospheric Science Elective       3         Math and Science Courses         MTH 151       Calculus I for Engineers 2       5         MTH 162       Calculus II       4         MTH 211       Calculus III       3         MTH 311       Introduction to Ordinary Differential Equations       3         PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory 1       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements	ISE 311	Applied Probability and Statistics	3
Marine Science Courses  MSC 301 Introduction to Physical Oceanography 3  Marine/Atmospheric Science Elective 3  Math and Science Courses  MTH 151 Calculus I for Engineers 2 5  MTH 162 Calculus II 4  MTH 211 Calculus III 3  MTH 311 Introduction to Ordinary Differential Equations 3  MTH 221 University Physics I 3  PHY 221 University Physics II 3  PHY 106 Physics Laboratory I 1  CHM 121 Principles of Chemistry 4  CHM 113 Chemistry Laboratory I 1  Biology Elective 3  General Education Requirements	MAE 303	Thermodynamics	
MSC 301 Introduction to Physical Oceanography  Marine/Atmospheric Science Elective  Math and Science Courses  MTH 151 Calculus I for Engineers 2 5  MTH 162 Calculus II 4  MTH 211 Calculus III 3  MTH 311 Introduction to Ordinary Differential Equations 3  PHY 221 University Physics I 3  PHY 222 University Physics II 3  PHY 106 Physics Laboratory I 1  CHM 121 Principles of Chemistry 4  CHM 113 Chemistry Laboratory I 1  Biology Elective General Education Requirements	Technical Elective		3
Marine/Atmospheric Science Elective  Math and Science Courses  MTH 151  Calculus I for Engineers 2  MTH 162  Calculus II  MTH 211  Calculus III  3  MTH 311  Introduction to Ordinary Differential Equations  PHY 221  University Physics I  PHY 222  University Physics II  PHY 106  Physics Laboratory I  CHM 121  Principles of Chemistry  CHM 113  Chemistry Laboratory I  Biology Elective  General Education Requirements	Marine Science Courses		
Math and Science CoursesMTH 151Calculus I for Engineers 25MTH 162Calculus II4MTH 211Calculus III3MTH 311Introduction to Ordinary Differential Equations3PHY 221University Physics I3PHY 222University Physics II3PHY 106Physics Laboratory I1CHM 121Principles of Chemistry4CHM 113Chemistry Laboratory I1Biology Elective3General Education Requirements	MSC 301	Introduction to Physical Oceanography	3
MTH 151 Calculus I for Engineers 2 MTH 162 Calculus II MTH 211 Calculus III 3 MTH 311 Introduction to Ordinary Differential Equations 3 PHY 221 University Physics I PHY 222 University Physics II PHY 106 Physics Laboratory 1 CHM 121 Principles of Chemistry CHM 113 Chemistry Laboratory I Biology Elective General Education Requirements	Marine/Atmospheric Science Elective		3
MTH 162       Calculus II       4         MTH 211       Calculus III       3         MTH 311       Introduction to Ordinary Differential Equations       3         PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory I       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements       3	Math and Science Courses		
MTH 211       Calculus III       3         MTH 311       Introduction to Ordinary Differential Equations       3         PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory 1       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements       3	MTH 151	Calculus I for Engineers <sup>2</sup>	5
MTH 311 Introduction to Ordinary Differential Equations PHY 221 University Physics I 3 PHY 222 University Physics II 3 PHY 106 Physics Laboratory 1 1 CHM 121 Principles of Chemistry 4 CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	MTH 162	Calculus II	4
PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory 1       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements       3	MTH 211	Calculus III	3
PHY 221       University Physics I       3         PHY 222       University Physics II       3         PHY 106       Physics Laboratory 1       1         CHM 121       Principles of Chemistry       4         CHM 113       Chemistry Laboratory I       1         Biology Elective       3         General Education Requirements       3	MTH 311	Introduction to Ordinary Differential Equations	3
PHY 106 Physics Laboratory 1 1 CHM 121 Principles of Chemistry 4 CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	PHY 221	University Physics I	
CHM 121 Principles of Chemistry 4 CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	PHY 222	University Physics II	3
CHM 113 Chemistry Laboratory I 1 Biology Elective 3 General Education Requirements	PHY 106	Physics Laboratory 1	1
Biology Elective  General Education Requirements	CHM 121	Principles of Chemistry	4
General Education Requirements	CHM 113	Chemistry Laboratory I	1
·	Biology Elective		3
Written Communication Skills:	General Education Requirements		
	Written Communication Skills:		

WRS 105	First-Year Writing I	3
WRS 107	First-Year Writing II: STEM	3
Quantitative Skills:		
MTH 151	Calculus I for Engineers (fulfilled through the major)	
Areas of Knowledge:		
Arts and Humanities Cognate		9
People and Society Cognate		9
STEM Cognate (9 credits) (fulfilled through the major)		
Total Credit Hours		122

Counts toward the Advanced Writing and Communication Skills Requirement

Internships, Practical Training, or other types of practicums are neither required nor optional credit-earning components in the established undergraduate curriculum. Credit earned through these experiences via UMI 305 will not count towards the degree requirements.

# **Plan of Study**

Freshman Year		
Fall		Credit Hours
EGN 114	Global Challenges Addressed by Engineering and Technology	3
MTH 151	Calculus I for Engineers	5
PHY 221	University Physics I	3
WRS 105	First-Year Writing I	3
	Credit Hours	14
Spring		
CAE 115	Introduction to Engineering II: Geospatial Data (Surveying and GIS) <sup>1</sup>	2
MTH 162	Calculus II	4
PHY 222	University Physics II	3
PHY 106	Physics Laboratory 1	1
WRS 107	First-Year Writing II: STEM	3
PS Cognate <sup>2</sup>		3
	Credit Hours	16
Sophomore Year		
Fall		
CET 300	Computational Methods for Engineers <sup>1</sup>	3
CAE 210	Mechanics of Solids I	3
MTH 211	Calculus III	3
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
PS Cognate <sup>2</sup>		3
	Credit Hours	17
Spring		
CET 340	Introduction to Environmental Engineering <sup>1</sup>	3
ECE 205	Principles of Electrical EngineeringI	3
MTH 311	Introduction to Ordinary Differential Equations	3
Biology Elective <sup>6</sup>		3
AH Cognate <sup>2</sup>		3
	Credit Hours	15
Junior Year		
Fall		
CET 330	Fluid Mechanics	3
CET 345	Environmental Laboratory and Analysis <sup>1</sup>	3

<sup>&</sup>lt;sup>2</sup> Fulfills the University General Education Quantitative Skills Proficiency Requirement

	Total Credit Hours	122
	Credit Hours	15
PS Cognate <sup>2</sup>		3
AH Cognate <sup>2</sup>		3
Environmental Engineering Course <sup>3</sup>		3
CAE 402	Professional Engineering Practice	3
CET 404	Senior Design Project II – Integrated Engineering Documents <sup>1</sup>	3
Spring	orean ribuits	
Air cognate	Credit Hours	15
AH Cognate <sup>2</sup>		3
Environmental Engineering Course <sup>3</sup>		3
Environmental Engineering Course <sup>3</sup>	water nesources Engineering in	3
CET 530	Water Resources Engineering II 1	3
CET 403	Senior Design Project I - Engineering Design <sup>1</sup>	2
Fall		
Senior Year	Credit Hours	15
Technical Elective	One dia Harris	3
Marine/Atmospheric Science Elective <sup>4</sup> Technical Elective <sup>5</sup>		3
Environmental Engineering Course 3		3
CET 440	Water Quality Control Systems <sup>1</sup>	3
CET 430	Water-Resources Engineering I	3
Spring	1	
	Credit Hours	15
MSC 301	Introduction to Physical Oceanography (MSC 111 not required)	3
ISE 311	Applied Probability and Statistics	3
MAE 303	Thermodynamics	3

- Only offered once a year in the semester indicated in the curriculum.
- <sup>2</sup> To be selected from approved lists. Students take a minimum of 3 courses (9 credits) in the AH cognate and 3 courses in the PS cognate (9 credits).
- <sup>3</sup> CET 533, CET 540, CET 541, and CET 543 are offered on a 3-semester rotation. Students must take all four courses.
- Students must select the Marine/Atmospheric Science Elective from the list of (a) 300-level or higher elective courses required for a minor in Marine Science, or (b) MSC 311, MSC 313, MSC 314, MSC 339, MSC 340, MSC 341, MSC 342, MSC 345, MSC 418, MSC 425. To complete the requirements for the minor in Marine Science, additional courses are required. The requirements for the minor in Marine Science can be found in the University Bulletin.
- <sup>5</sup> Technical Elective is any engineering course 200 level or higher. CET 395 Undergraduate Research can also be used as a Technical Elective.
- BIL 150 or BIL 160. Note that BIL 151 need not be taken with BIL 150, and BIL 150 is a prerequisite of BIL 160.

#### Mission

The mission of the Department of Chemical, Environmental, and Materials Engineering is to:

- Provide high-quality undergraduate and graduate education in chemical, environmental, and materials engineering that will prepare graduates for
  professional careers and a lifetime of learning.
- · Conduct high-quality research that will advance the body of knowledge and improve the quality of human life.
- · Serve the engineering profession and society through active involvement in professional organizations and contribution of professional expertise.

### **Educational Objectives**

The educational objectives of the Environmental Engineering Program are to produce graduates who within the first several years following graduation are either

- 1. Working as a professional in an area closely related to environmental engineering, or
- 2. Pursuing a graduate or professional degree.

### **Student Learning Outcomes**

- 1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- 3. An ability to communicate effectively with a range of audiences.
- 4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- 5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.