B.S. IN ENVIRONMENTAL ENGINEERING/M.S. IN CIVIL ENGINEERING

Overview

This 5-Year program is open to students who are admitted to the graduate program at the end of their junior year. Students applying for this program should have a minimum grade point average of 3.0 and score more than 310 on the Graduate Record Examination.

Graduation

Requirements for graduation are:

- Minimum of 30 graduate-level credits with a GPA of at least 3.000, and no grade lower than C; refer to the Curriculum Requirements for details regarding the distribution of the credits.
- Completion of the BS degree requirements

Admission Requirements

Students in the BSEnE program having a GPA of 3.0 or better are encouraged to apply to the 5-year BS/MS program during their junior year. Applicants are required to submit official transcripts, and three letters of reference. Admission criteria are described under College of Engineering - Graduate Admission Requirements (https://bulletin.miami.edu/graduate-academic-programs/engineering/).

Curriculum Requirements

Code	Title	Credit Hours
B.S. IN ENVIRONMENTAL ENGINEERING REQUIREMENTS		
Engineering Courses		
EGN 114	Global Challenges Addressed by Engineering and Technology	3
CET 330	Fluid Mechanics	3
CET 340	Introduction to Environmental Engineering	3
CET 345	Environmental Laboratory and Analysis [1]	3
CET 403	Senior Design Project I - Engineering Design [1]	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 [1]	3
ECE 205	Principles of Electrical Engineering–I	3
ISE 311	Applied Probability and Statistics	3
MAE 303	Thermodynamics	3
Technical Elective		9
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
PHY 221	University Physics I	3
PHY 222	University Physics II	3

PHY 224	University Physics II Lab	1
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
Biology Elective		3
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)		
M.S. IN CIVIL ENGINEERING REQUIREMENTS (30 CREDIT HOURS)		
6 credits from Group A		6
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
3 credits from Group G		3
Group G: CAE Master's Design Project		
CAE 604	Master's Design Project	
9 credits from any of the following Groups: A, and/or B		9
Group A: 700-level lecture-based CAE Courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE Courses in civil and architectural engineering		
9 credits from any of the following Groups: A, B, C, and/or D		9
Group A: 700-level lecture-based CAE Courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE Courses in civil and architectural engineering		
Group C: 600- or 700-level CAE courses in Construction Management (CM)		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799) except CAE and UMI		
3 credits from any of the following Groups: A, B, D, and/or E		3
Group A: 700-level lecture-based CAE Courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE Courses in civil and architectural engineering		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799) except CAE and UMI		
Group E: CAE Independent Study (Special Problems)		
CAE 695	Special Problems	
or CAE 795	Special Problems	
Total Credit Hours		**152**

Internships, Practical Training, or other types of practicum 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.

At the graduate level, the Program of Study is the student's specific set of coursework that defines the course requirements for graduation and must be approved by an advisory committee (known as the Supervisory Committee). The Program of Study is tailored to the student's background and goals by their advisor, and must be approved as constituting an MS in Civil Engineering by the student's Supervisory Committee.

The graduate course requirements for graduation are:

- Completion of the BSEnE degree
- Minimum of 30 graduate-level credits with a GPA of at least 3.000, and no grade lower than C.
- The requirement list is provided below. The classification of courses into their respective Groups can be found in the CAE Courses (http://bulletin.miami.edu/graduate-academic-programs/engineering/civil-architectural-environmental-engineering/#coursestext)section.
- Students majoring in environmental engineering who are pursuing an MSCE may substitute CET courses for CAE courses with program approval.

Transfer of credits from other institutions

- A total of 6 credits of transfer and/or exchange coursework not counted towards the student's B.S. may be taken at another institution and used to satisfy requirements for the M.S. The number of eligible credits for transfer is 9, when pre-approved coursework is taken as part of a semester abroad experience.

Additional Details

- The classification of courses into their respective Groups can be found in the (http://bulletin.miami.edu/undergraduate-academic-programs/engineering/civil-architectural-environmental-engineering/#coursestext)CAE Courses section.
- The following graduate-level courses in CET (previously offered in CAE) will count as CAE courses: CET 633, CET 640, CET 641, CET 642, CET 643, CET 730, CET 735.
- Internships, Practical Training, workshops, or other types of practicums are neither required nor optional credit-earning components in the established graduate curriculum (Program of Study). Credit earned through these experiences (such as UMI 605) *will not* count towards any CAE degree requirements.
- The Supervisory Committee must have a minimum of 3 members, including:
  - Committee Chair (Advisor) shall be full-time CAE faculty and a member of the Graduate Faculty
  - Full-time or part-time CAE Faculty
  - Non-CAE member with an earned PhD
  - In addition to the Committee Chair, at least one member must be tenured/tenure-earning or a member of the Graduate Faculty.

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)	2
MTH 162	Calculus II	4
PHY 222	University Physics II	3
PHY 224	University Physics II Lab	1
WRS 107	First-Year Writing II: STEM	3
PS Cognate		3
	Credit Hours	**16**
Sophomore Year		
Fall		
CAE 210	Mechanics of Solids I	3
MTH 211	Calculus III	3
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
AH Cognate		3
PS Cognate		3
	Credit Hours	**17**
Spring		
CET 340	Introduction to Environmental Engineering	3
ECE 205	Principles of Electrical Engineering--I	3
MTH 311	Introduction to Ordinary Differential Equations	3
Biology Elective		3
AH Cognate		3
	Credit Hours	**15**

Junior Year		
Fall		
CET 330	Fluid Mechanics	3
MAE 303	Thermodynamics	3
ISE 311	Applied Probability and Statistics	3
MSC 301	Introduction to Physical Oceanography	3
Technical Elective		3
	Credit Hours	**15**
Spring		
CET 345	Environmental Laboratory and Analysis	3
CET 430	Water-Resources Engineering I	3
CET 440	Water Quality Control Systems	3
Environmental Engineering Course		3
Marine/Atmospheric Science Elective		3
	Credit Hours	**15**
Senior Year		
Fall		
CET 403	Senior Design Project I - Engineering Design	3
CET 530	Water Resources Engineering II	3
Environmental Engineering Course		3
Environmental Engineering Course		3
Technical Elective		3
	Credit Hours	**15**
Spring		
CAE 402	Professional Engineering Practice	3
CAE 604	Master's Design Project *	3
Environmental Engineering Course		3
Technical Elective		3
AH Cognate		3
PS Cognate		3
	Credit Hours	**18**
Fifth Year (Graduate)		
Fall		
Graduate Level Course from Group A		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Graduate Level Course from Group A or B		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil, architectural, and environmental engineering		
Graduate Level Course from Group A, B, C, or D		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil, architectural, and environmental engineering		
Group C: 600- or 700-level CAE courses in Construction Management (CM)		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799)		
Graduate Level Course from Group A, B, D, or E		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil, architectural, and environmental engineering		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799)		
Group E: CAE Independent Study (Special Problems)		
	Credit Hours	**12**
Spring		
Graduate Level Course from Group A		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		

Graduate Level Course from Group A or B		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil and architectural engineering		
Graduate Level Course from Group A or B		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil and architectural engineering		
Graduate Level Course from Group A, B, C, or D		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil and architectural engineering		
Group C: 600- or 700-level CAE courses in Construction Management (CM)		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799)		
Graduate Level Course from Group A, B, C, or D		3
Group A: 700-level lecture-based CAE courses in civil and architectural engineering		
Group B: 600-level lecture-based CAE courses in civil and architectural engineering		
Group C: 600- or 700-level CAE courses in Construction Management (CM)		
Group D: Any pre-approved course in any UM Department at the 600- or 700-level (i.e. XXX 600-799)		
	Credit Hours	**15**
	Total Credit Hours	**152**

* In the Spring of the Senior year, students enroll in CAE 604 instead of CET 404. CAE 604 counts towards both the undergraduate and graduate degrees.