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

Overview

The Department of Civil and Architectural Engineering (CAE) offers a 5-year BS/MS program that allows students to earn both a Bachelor's and Master's degree in civil or architectural engineering.

The educational objectives, specialty areas, and learning outcomes of each Master of Science program are shown in their respective sections MSAE (http://bulletin.miami.edu/graduate-academic-programs/engineering/civil-architectural-environmental-engineering/architectural-engineering/ms/) and MSCE (http://bulletin.miami.edu/graduate-academic-programs/engineering/civil-architectural-environmental-engineering/civil-engineering-ms/).

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 (GPA) of 3.0.

Admission Requirements

Undergraduate students of the CAE department 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/).

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

Curriculum Requirements

The Program of Study is the student's specific set of coursework that defines the course requirements for graduations 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:

- · 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.

Code	Title	Credit Hours
BSCE Requirements (124 credits)		
Engineering Courses		
CAE 115	Introduction to Engineering II: Geospatial Data (Surveying and GIS)	2
CAE 210	Mechanics of Solids I	3
CAE 211	Mechanics of Solids II	3
CAE 212	Structural Laboratory	1
CAE 310	Structural Analysis	3
CAE 320	Concrete Structures	3
CAE 321	Steel Structures	3
CAE 330	Fluid Mechanics	3
CAE 350	Transportation Engineering I	3
CAE 361	Building Information Modeling I	3
CAE 370	Geotechnical Engineering I	3
CAE 371	Geotechnical Laboratory	1
CAE 401	Civil and Architectural Engineering Seminars (Civil and Architectural Engineering Seminars (NEW COURSE))	1
CAE 402	Professional Engineering Practice	3
CAE 403	Senior Design Project I - Engineering Design	3
CAE 430	Water-Resources Engineering I	3
CAE 470	Foundations and Earth Retaining Systems	3

CET 340	Introduction to Environmental Engineering	3
CET 440	Water Quality Control Systems	3
ECE 205	Principles of Electrical EngineeringI	3
EGN 110	Innovation and Entrepreneurship in Engineering	3
or EGN 114	Global Challenges Addressed by Engineering and Technology	
or EGN 123	Computing and Digital Solutions for the future	
ISE 311	Applied Probability and Statistics	3
MAE 303	Thermodynamics	3
CEN Tech Elective Course		3
CEN Design Elective		6
Math and Science Courses		
MTH 151	Calculus I for Engineers	5
MTH 162	Calculus II	4
MTH 211	Calculus III	3
MTH 311	Introduction to Ordinary Differential Equations	3
CHM 151	Chemistry for Engineers	3
CHM 153	Chemistry Laboratory for Engineers	1
PHY 221	University Physics I	3
PHY 222	University Physics II	3
PHY 106	Physics Laboratory 1	1
Basic Science 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)		
MS Requirements (30 credits)		
6 credits from Group A		6
Group A: 700-level lecture-based CAE Courses in civil an	d 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 an	d architectural engineering	
Group B: 600-level lecture-based CAE Courses in civil an	d architectural engineering	
9 credits from any of the following Groups: A, B, C, and/or I)	9
Group A: 700-level lecture-based CAE Courses in civil an	d architectural engineering	
Group B: 600-level lecture-based CAE Courses in civil an	d architectural engineering	
Group C: 600- or 700-level CAE courses in Construction	Management (CM)	
Group D: Any pre-approved course in any UM Departmen	at 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 an	d architectural engineering	
Group B: 600-level lecture-based CAE Courses in civil an	d architectural engineering	
Group D: Any pre-approved course in any UM Departmen	at 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		154

Notesl. All courses are 3 credit hours unless otherwise indicated

- 2. Master's Thesis (CAE 810) will not count towards the degree requirements
- 3. Courses may not count towards multiple requirements
- 4. 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.

Refer to the Additional Details section (below) for additional options and restrictions.

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)
- Internships, Practical Training, workshops, or other types of practicum 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:
- 1. Committee Chair (Advisor) shall be full-time CAE faculty and a member of the Graduate FAculty
- 2. Full-time or part-time CAE Faculty
- 3. 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

The course requirements for the BS and MS portion of the five-year BS/MS program can be met as follows:

Freshman Year		
First Semester		Credit Hours
EGN 110, 114, or 123	Innovation and Entrepreneurship in Engineering or Global Challenges Addressed by Engineering and Technology or Computing and Digital Solutions for the future	3
MTH 151	Calculus I for Engineers	5
PHY 221	University Physics I	3
WRS 105	First-Year Writing I	3
PS Cognate ²		3
	Credit Hours	17
Second Semester		
CAE 115	Introduction to Engineering II: Geospatial Data (Surveying and GIS)	2
CAE 210	Mechanics of Solids I	3
CHM 151	Chemistry for Engineers	3
CHM 153	Chemistry Laboratory for Engineers	1
MTH 162	Calculus II	4
WRS 107	First-Year Writing II: STEM	3
	Credit Hours	16
Sophomore Year		
First Semester		
CAE 211	Mechanics of Solids II	3
CAE 212	Structural Laboratory	1
ISE 311	Applied Probability and Statistics	3

4 B.S./M.S. in Civil Engineering

PHY 222 University Physics II 3 AH Cognate 2 9 PHY 106 Physics Laboratory 1 1 Second Semester CAE 310 Structural Analysis 3 CET 340 Introduction to Environmental Engineering 3 ECE 205 Principles of Electrical Engineering-I 3 MTH 311 Introduction to Ordinary Differential Equations 3 AH Cognate 2 3 Credit Hours 15 Junior Year 15 First Semester 3 CAE 320 Concrete Structures 3 CAE 330 Fluid Mechanics 3 CAE 350 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 3 PS Cognate 2 3 Second Semester 3 CAE 321 Steel Structures 18 CAE 321 Steel Structures 3 CAE 321 Steel Structures 3 CAE 321 Geotechnic	MTH 211	Calculus III	3	
AH Cognate 2 PHY 106 Physics Laboratory 1 17 Second Semester Credit Hours 17 Second Semester CE 310 Structural Analysis 3 CET 340 Introduction to Environmental Engineering 3 SEC 205 Phinopipes of Electrical Engineering 4 3 BEEZ 205 Phinopipes of Electrical Engineering 4 AH Cognate 2 Credit Hours 15 Junior Year First Semester CAE 320 Concrete Structures CAE 320 Concrete Structures CAE 320 Transportation Engineering 1 3 Basic Science Elective 3 AE 350 Transportation Engineering 1 3 Basic Science Elective 9 PS Cognate 2 Credit Hours 18 Second Semester Credit Hours 18 Credit Hours 18 Credit Hours 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Credit Hours 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Credit Hours 18 Credit Hours 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Credit Hours 18 Second Semester 18 Credit Hours 18 Second Semester 19 Credit Hours 19 Second		University Physics II		
Phys 106		· · · · · · · · · · · · · · · · · · ·		
Credit Hours		Physics Laboratory 1		
Second Semeeter	1 1		17	
CAE 310 Structural Analysis 3 CET 340 Introduction to Environmental Engineering 3 CEZ 205 Principles of Electrical Engineering-1 3 MTH 311 Introduction to Ordinary Differential Equations 3 All Cognate 2 Credit Hours 15 Junior Year Test Semester 15 CAE 320 Concrete Structures 3 CAE 330 Fluid Mechanics 3 CAE 330 Thermodynamics 3 Basic Science Elective 3 PS Cognate 2 18 Second Semester 18 CAE 321 Steel Structures 3 CAE 321 Steel Structures 3 CAE 321 Steel Structures 3 CAE 321 Geotechnical Engineering 1 3 CAE 321 Geotechnical Engineering 1 3 CAE 320 Geotechnical Engineering 1 3 CAE 430 Water-Resources Engineering 1 3 CET 440 Water Quality Control Systems 3 Senior Year </td <td>Second Semester</td> <td></td> <td></td>	Second Semester			
Introduction to Environmental Engineering	CAE 310	Structural Analysis	3	
ECE 205				
MTH 311 Introduction to Ordinary Differential Equations 3 AH Cognate 2 Credit Hours 15 Junior Year First Semester CAE 320 Concrete Structures 3 CAE 330 Fluid Mechanics 3 CAE 330 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 5 Cognate 2 Coedit Hours 3 CAE 350 Credit Hours 3 CAE 350 CREDIT SEMESTER 3 CAE 351				
AH Cognate 2 Credit Hours Junior Year First Semester				
Credit Hours		, , , , , , , , , , , , , , , , , , , ,		
Junior Year First Semester Street Structures Stru	3	Credit Hours		
CAE 320 Concrete Structures 3 CAE 330 Fluid Mechanics 3 CAE 350 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 3 PS Cognate ² Credit Hours 18 Second Semester 18 CAE 321 Steel Structures 3 CAE 360 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Engineering I 3 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 401 Civil and Architectural Engineering Seminars 3 CAE 402 Foundations and Earth Retaining Systems 3 CEN Design Elective I ³ Senior Design Project I - Engineering Practice 3	Junior Year		-	
CAE 320 Concrete Structures 3 CAE 330 Fluid Mechanics 3 CAE 350 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 3 PS Cognate ² Credit Hours 18 Second Semester 18 CAE 321 Steel Structures 3 CAE 360 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Engineering I 3 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 401 Civil and Architectural Engineering Seminars 3 CAE 402 Foundations and Earth Retaining Systems 3 CEN Design Elective I ³ Senior Design Project I - Engineering Practice 3	First Semester			
CAE 330 Fluid Mechanics 3 CAE 350 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 3 PS Cognate 2 3 Credit Hours 18 Second Semester CAE 321 Steel Structures 3 CAE 361 Building Information Modeling I 3 CAE 370 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 402 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 3 PS Cognate 2 3 3 Credit Hours 3 3 Second Semester 3 3 CEN Design Elective II 4 3 <td></td> <td>Concrete Structures</td> <td>3</td>		Concrete Structures	3	
CAE 350 Transportation Engineering I 3 MAE 303 Thermodynamics 3 Basic Science Elective 3 PS Cognate 2 3 Credit Hours 18 Second Semester CAE 321 Steel Structures 3 CAE 361 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Engineering I 3 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 Cedit Hours 16 Semior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 402 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 Credit Hours 3 Second Semester Credit Hours 3	CAE 330	Fluid Mechanics		
MAE 303 Thermodynamics 3 Basis Science Elective 3 PS Cognate 2 18 Credit Hours 18 Second Semester 18 CAE 321 Steel Structures 3 CAE 365 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 430 Water-Resources Engineering I 3 CAE 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 403 Senior Design Project I - Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 403 Senior Design Project I - Engineering Design 3 CAE 4040 Foundations and Earth Retaining Systems 3 Graduate Level Course 3 Graduate Level Course 3 CEN Tech Heutins 19 Second Semester 3	CAE 350	Transportation Engineering I		
Basic Science Elective 3 PS Cognate 2 3 Credit Hours 18 Second Semester 18 CAE 321 Steel Structures 3 CAE 361 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 404 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 3 PS Cognate 2 3 3 Graduate Level Course 3 3 Graduate Level Course 19 3 Second Semester 3 3 CEA E 402 Professional Engineering Practice<				
PS Cognate 2 Steel Hours 18 18 18 18 18 18 18 1	Basic Science Elective	•		
Second Semester Second Sem	PS Cognate ²			
Second Semester 3 CAE 321 Steel Structures 3 CAE 361 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 4040 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 9 Se Cognate 2 9 Graduate Level Course 3 Graduate Level Course 19 Caed 402 Professional Engineering Practice 3 CAE 402 Professional Engineering Practice 3 CEN Tech Elective Course 2 3 Gr		Credit Hours		
CAE 361 Building Information Modeling I 3 CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 CEN Design Elective I 4 3 Credit Hours 19 Second Semester CAE 402 Professional Engineering Practice 3 CAE 402 Professional Engineering Practice 3 CEN Tech Elective Course 2 3 Graduate Level Course 2 3 Graduate Level Course 2 3 Credit Hours 18 Fifth Year </td <td>Second Semester</td> <td></td> <td></td>	Second Semester			
CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 Seconster 3 Graduate Level Course 3 Gredit Hours 19 Second Semester CEN Design Elective II 4 3 CEN Design Elective Course 2 3 <td cols<="" td=""><td>CAE 321</td><td>Steel Structures</td><td>3</td></td>	<td>CAE 321</td> <td>Steel Structures</td> <td>3</td>	CAE 321	Steel Structures	3
CAE 370 Geotechnical Engineering I 3 CAE 371 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 Seconster 3 Graduate Level Course 3 Gredit Hours 19 Second Semester CEN Design Elective II 4 3 CEN Design Elective Course 2 3 <td cols<="" td=""><td>CAE 361</td><td>Building Information Modeling I</td><td>3</td></td>	<td>CAE 361</td> <td>Building Information Modeling I</td> <td>3</td>	CAE 361	Building Information Modeling I	3
CAE 371 Geotechnical Laboratory 1 CAE 430 Water-Resources Engineering I 3 CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 SCOgnate 2 3 Graduate Level Course 3 Graduate Level Course 3 Credit Hours 19 Second Semester CAE 604 Master's Design Project 3 CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 3 CEN Design Elective Course 2 3 Graduate Level Course 3 Credit Hours 18	CAE 370			
CET 440 Water Quality Control Systems 3 Credit Hours 16 Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 3 PS Cognate 2 3 Graduate Level Course 3 Graduate Level Course 3 Graduate Level Course 3 CEA 402 Professional Engineering Practice 3 CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 3 CEN Tech Elective Course 2 3 Graduate Level Course 3 AH Cognate 2 3 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3	CAE 371			
Credit Hours First Semester CAE 401 Civil and Architectural Engineering Seminars CAE 403 Senior Design Project I - Engineering Design CAE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems 3 CRO Design Elective I 3 PS Cognate 2 Graduate Level Course Graduate Level Course Credit Hours 19 Credit Hours 19 Credit Hours 19 CRE 402 Professional Engineering Practice 3 CAE 403 CAE 404 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 CEN Tech Elective Course 3 Graduate Level Course 3 CEN Tech Elective Course 3 Graduate Level Course 4 Fifth Year Fifth Year First Semester Graduate Level Course 3 3 Credit Hours 18 Fifth Year First Semester	CAE 430	Water-Resources Engineering I	3	
Credit Hours Senior Year First Semester CAE 401 Civil and Architectural Engineering Seminars CAE 403 Senior Design Project I - Engineering Design CAE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems CRE 470 Foundations and Earth Retaining Systems 3 SPS Cognate 2 Graduate Level Course Graduate Level Course Graduate Level Course Credit Hours 19 Second Semester CAE 402 Professional Engineering Practice 3 CAE 404 Master's Design Project 3 CAE 604 Master's Design Project 3 CEN Tech Elective Course 3 Graduate Level Course 3 Graduate Level Course 3 Graduate Level Course 4 Term Tech Elective Course 5 Graduate Level Course 5 Graduate Level Course 6 Graduate Level Course 7 Gredit Hours 7 Gredit Hours 8 Fifth Year First Semester Graduate Level Course 7 Graduate Level Course 8 Term Tech Elective Course 9 Term Term Term Term Term Term Term Term	CET 440			
First Semester CAE 401 Civil and Architectural Engineering Seminars 1 CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3		Credit Hours	16	
CAE 401 Civil and Architectural Engineering Seminars CAE 403 Senior Design Project I - Engineering Design 3 CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 PS Cognate 2 Graduate Level Course Graduate Level Course Credit Hours 19 Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Design Elective II 4 CEN Tech Elective Course 3 Graduate Level Course 3 Graduate Level Course 3 Graduate Level Course 3 Graduate Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 Graduate Level Course 3 Graduate Level Course 4 Graduate Level Course 5 Graduate Level Course 6 Graduate Level Course 7 Graduate Level Course 8 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3	Senior Year			
CAE 403 Senior Design Project I - Engineering Design CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 PS Cognate 2 3 Graduate Level Course 3 Graduate Level Course 5 Credit Hours 19 Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Design Elective II 4 CEN Tech Elective Course 3 Graduate Level Course 3 Graduate Level Course 4 Graduate Level Course 5 Graduate Level Course 7 Graduate Le	First Semester			
CAE 470 Foundations and Earth Retaining Systems 3 CEN Design Elective I 3 PS Cognate 2 Graduate Level Course Graduate Level Course Credit Hours 19 Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Design Elective II 4 CEN Tech Elective Course 3 Graduate Level Course 3 Graduate Level Course 4 Graduate Level Course 5 Graduate Level Course 7 Graduate Level Course 8 H Cognate 2 Frifth Year First Semester Graduate Level Course 3 3 Graduate Level Course 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CAE 401	Civil and Architectural Engineering Seminars	1	
CEN Design Elective I ³ PS Cognate ² Graduate Level Course Graduate Level Course Credit Hours Second Semester CAE 402 Professional Engineering Practice 3 CEN Design Elective II ⁴ CEN Design Elective II ⁴ 3 CEN Tech Elective Course 3 Graduate Level Course 3 Graduate Level Course 4 Graduate Level Course 5 Graduate First Semester Graduate Level Course 3 3 Graduate Level Course 3 3 Graduate Level Course 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	CAE 403	Senior Design Project I - Engineering Design	3	
PS Cognate 2 Graduate Level Course Graduate Level Course Credit Hours Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 Graduate Level Course 4 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3 3 Graduate Level Course 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CAE 470	Foundations and Earth Retaining Systems	3	
PS Cognate 2 Graduate Level Course Graduate Level Course Credit Hours Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 Graduate Level Course 4 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3 3 Graduate Level Course 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CEN Design Elective I 3		3	
Graduate Level Course Credit Hours Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 Graduate Level Course AH Cognate 2 Credit Hours Tifth Year First Semester Graduate Level Course 3 Graduate Level Course 3 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	PS Cognate ²		3	
Credit Hours Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 3 Graduate Level Course 4 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3 3 Credit Hours 3 3 Credit Hours 3 Credit Hours 3 3 Credit	Graduate Level Course		3	
Second Semester CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 CEN Tech Elective Course 2 Graduate Level Course 3 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3 Graduate Level Course 3 Semester 3 First Semester 3 Graduate Level Course 3	Graduate Level Course		3	
CAE 402 Professional Engineering Practice 3 CAE 604 Master's Design Project 3 CEN Design Elective II 4 3 CEN Tech Elective Course 2 3 Graduate Level Course 3 AH Cognate 2 3 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3		Credit Hours	19	
CAE 604 Master's Design Project 3 CEN Design Elective II 4 3 CEN Tech Elective Course 2 3 Graduate Level Course 3 AH Cognate 2 3 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3	Second Semester			
CEN Design Elective II 4 CEN Tech Elective Course 2 3 Graduate Level Course 3 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3	CAE 402	Professional Engineering Practice	3	
CEN Tech Elective Course 2 Graduate Level Course 3 AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3		Master's Design Project	3	
Graduate Level Course AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3			3	
AH Cognate 2 Credit Hours 18 Fifth Year First Semester Graduate Level Course 3			3	
Credit Hours 18 Fifth Year First Semester Graduate Level Course 3			3	
Fifth Year First Semester Graduate Level Course 3	AH Cognate ²		3	
First Semester Graduate Level Course 3		Credit Hours	18	
Graduate Level Course 3	Fifth Year			
	First Semester			
Graduate Level Course 3	Graduate Level Course			
	Graduate Level Course		3	

Graduate Level Course		3
	Credit Hours	9
Second Semester		
Graduate Level Course		3
Graduate Level Course		3
Graduate Level Course		3
	Credit Hours	9
	Total Credit Hours	154