

B.S./M.S. IN ARCHITECTURAL 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 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 3.5 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 Colleges of Engineering – Graduate Admission Requirements.

Sample Plan of Study

A typical plan of study is shown in the table below.

Freshman Year		
First Semester		Credit Hours
CAE 111	Introduction to Engineering I	3
WRS 105	First-Year Writing I	3
MTH 151	Calculus I for Engineers	5
PHY 221	University Physics I	3
Credit Hours		14
Second Semester		
CAE 115	Introduction to Engineering II: Geospatial Data (Surveying and GIS)	1
CAE 210	Mechanics of Solids I	3
WRS 107	First-Year Writing II: STEM	3
MTH 162	Calculus II	4
PHY 222	University Physics II	3
PHY 224	University Physics II Lab	1
GEG 199	Geographic Information Systems for Engineers	1
Credit Hours		16
Sophomore Year		
First Semester		
CAE 211	Mechanics of Solids II	3
CAE 212	Structural Laboratory	1
ARC 230	Building Technology I: Materials and Methods	3
ARC 267	History of Architecture I: Ancient, Medieval and Renaissance	3
PHY 223	University Physics III	3
PHY 225	University Physics III Lab	1
ISE 311	Applied Probability and Statistics	3
Credit Hours		17
Second Semester		
CAE 310	Structural Analysis	3
ARC 292	Introduction to Architecture Design I	3
CHM 151	Chemistry for Engineers	3
CHM 153	Chemistry Laboratory for Engineers	1
MTH 211	Calculus III	3

MTH 311	Introduction to Ordinary Differential Equations	3
Credit Hours		16
Junior Year		
First Semester		
CAE 320	Concrete Structures	3
CAE 330	Fluid Mechanics	3
CAE 361	Building Information Modeling I	3
MAE 303	Thermodynamics	3
ARC 293	Introduction to Architecture Design II	3
PS Cognate ²		3
Credit Hours		18
Second Semester		
CAE 321	Steel Structures	3
CAE 370	Geotechnical Engineering I	3
CAE 371	Geotechnical Laboratory	1
CAE 380	Electrical and Illumination Systems for Buildings	3
CAE 381	Building Mechanical Systems I: Hvac Fundamentals	3
ARC 268	History of Architecture II: Baroque through Contemporary	3
Credit Hours		16
Senior Year		
First Semester		
CAE 403	Senior Design Project I - Engineering Design	3
CAE 470	Foundations and Earth Retaining Systems	3
CAE 480	Plumbing and Life Safety for Buildings	3
CAE 481	Building Mechanical Systems II: HVAC Systems	3
PS Cognate		3
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		
Credit Hours		18
Second Semester		
CAE 402	Professional Engineering Practice	3
CAE 460	Construction Management	3
CAE 581	Energy-Efficient Building Design	3
PS Cognate		3
CAE 604	Master's Design Project *	3
Credit Hours		15
Graduate Year		
First Semester		
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 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, 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 and architectural 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
Second Semester	
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, 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) except CAE and UMI	
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) except CAE and UMI	
Credit Hours	12
Total Credit Hours	154

* In their senior year, students enroll in CAE 604 instead of CAE 404.