MASTER OF ENGINEERING IN ARCHITECTURAL ENGINEERING

These master of engineering programs are course-only, professionally oriented degree programs that permit a concentration in preparation for engineering practice. Admission requirements to these programs are the same as those for the master of science program. Candidates in these programs must complete a minimum of 32 credit hours, up to three of which may be a special project course—CAE 597 or ENVE 597. Up to 12 credit hours of 400-level undergraduate coursework (except CAE 431 and CAE 432) may be included in the master of engineering program with prior adviser approval. No thesis or comprehensive examination is required for completion of the degree.

The Master of Engineering in Architectural Engineering program is oriented toward students who need to develop more knowledge about buildings. Students are expected to have educational backgrounds in architectural engineering, mechanical engineering, structural engineering, architecture, or other relevant disciplines. The program covers the three basic aspects of architectural engineering: building science, structures, and construction management.

Curriculum

This program involves four core courses, four or five elective courses from one field of concentration, and two courses from any relevant field of concentration, general background courses, or graduate courses offered by the College of Architecture.

Core Courses			(12)
CAE 513	Building Science		3
CAE 574	Economic Decision Analysis in Civil Engineering		3
Select a minimum of two courses from the following:			6
CAE 502	Acoustics and Lighting	3	
CAE 521	Building Illumination Design	3	
CAE 524	Building Enclosure Design	3	
CAE 553	Measurement and Instrumentation in Architectural Engineering	3	
ENVE 576	Indoor Air Pollution	3	
Specialization Electives			(12-15)
Select 12-15 credit hours [1]			12-15
General Electives			(6-9)
Select 6-9 credit hours from the following courses: [2]			6-9
CAE 430	Probability Concepts in Civil Engineering Design	3	
CAE 523	Statistical Analysis of Engineering Data	3	
CAE 575	Systems Analysis in Civil Engineering	3	
CAE 597	Special Problems	Credit Variable	
CHE 543	Energy, Environment, and Economics	3	
MMAE 515	Engineering Acoustics	3	

Minimum degree credits required: 32

1. Specializations in Building Systems, Construction Management, or Structures require 12-15 credit hours in the area of specialization. Please see the Specializations tab on this page.
2. Other courses are allowed but are subject to adviser approval.

Architectural Engineering Specializations

Students must complete 12-15 credit hours from one area of specialization (Building Systems, Construction Management, or Structures).

Building Systems

Select a minimum of four to five courses from the following:			12-15
ARCH 551	Design of Energy-Efficient Buildings I	3	
ARCH 552	Design of Energy-Efficient Buildings II	3	
CAE 461	Plumbing and Fire Protection Design	3	
CAE 464	HVAC Systems Design	3	
CAE 502	Acoustics and Lighting	3	
CAE 506	Building Envelope Rehabilitation	3	
CAE 510	Dynamics of Fire	3	
CAE 511	Fire Protection of Buildings	3	
CAE 512	Computer Modeling of Fire	3	
CAE 521	Building Illumination Design	3	
CAE 524	Building Enclosure Design	3	
CAE 526	Energy Conservation Design in Buildings	3	
CAE 527	Control of Building Environmental Systems	3	
CAE 528	Building Electrical Systems Design	3	
CAE 553	Measurement and Instrumentation in Architectural Engineering	3	
ENVE 576	Indoor Air Pollution	3	
MMAE 517	Computational Fluid Dynamics	3	
MMAE 525	Fundamentals of Heat Transfer	3	
MMAE 526	Heat Transfer: Conduction	3	
MMAE 527	Heat Transfer: Convection and Radiation	3	
Total Credit Hours			12-15

Construction Management

Select a minimum of four to five courses from the following:			12-15
ARCH 560	Integrated Building Delivery Practice/BIM	3	
CAE 470	Construction Methods and Cost Estimating	3	
CAE 471	Construction Planning and Scheduling	3	
CAE 472	Construction Site Operation	3	
CAE 473	Construction Contract Administration	3	
CAE 486	Soil and Site Improvement	3	
CAE 570	Legal Issues in Civil Engineering	3	
CAE 571	Lean Construction and Control	3	
CAE 572	Construction Cost Accounting and Control	3	
CAE 573	Construction Management with Building Information Modeling	3	
CAE 575	Systems Analysis in Civil Engineering	3	
CAE 577	Construction Equipment Management	3	
CAE 578	Construction Claims Management	3	
CAE 579	Real Estate Fundamentals for Engineers and Architects	3	
Total Credit Hours			12-15

Structures

Select a minimum of four to five courses from the following:		12-15
CAE 410	Introduction to Wind and Earthquake Engineering	3
CAE 435	Experimental Analysis of Structures	3
CAE 436	Design of Masonry and Timber Structures	3
CAE 457	Geotechnical Foundation Design	3
CAE 503	Advanced Structural Analysis	3
CAE 504	Seismic Retrofit and Earthquake Hazard Reduction	4
CAE 518	Advanced Reinforced Concrete	3
CAE 520	Buckling of Structures	4
CAE 522	Structural Model Analysis	4
CAE 525	Advanced Steel and Composite Structures	4
CAE 530	Finite Element Method of Analysis	3
CAE 532	Analysis of Plates and Shells	4
CAE 533	Theory and Analysis of Thin Shells	3
CAE 534	Computational Techniques in Finite Element Analysis	3
CAE 537	Homeland Security Concerns in Building Designs	3
CAE 551	Prestressed Concrete	3
CAE 560	Plastic Methods	4
CAE 561	Structural Reliability and Probabilistic Bases of Design	3
CAE 564	Design of Foundations, Embankments and Earth Structures	4
CAE 582	Structural Wind and Earthquake Engineering	4
Total Credit Hours		12-15