MASTER OF ENGINEERING IN STRUCTURAL ENGINEERING

The Master of Engineering in Structural Engineering provides students with the knowledge needed to design the built environment. Students learn how buildings and bridges may be designed to resist the forces imposed upon them by external loads, gravity, wind, and earthquakes. Up-to-date computer-aided design techniques and the latest national building codes dealing with steel, reinforced concrete, pre-stressed concrete, and masonry structures are treated.

Up to 12 credit hours of 400-level undergraduate coursework may be included in the program with adviser approval. No thesis or comprehensive examination is required for completion of the degree. CAE 431 and CAE 432 do apply towards this program, except for students pursuing a Bachelor of Science in Architectural Engineering in conjunction with an Accelerated Master's of Engineering in Structural Engineering (where two of the three shared courses between the programs can include CAE 431 and CAE 432).

Curriculum

Code	Title		Credit Hours
Required Core Courses			**(12)**
CAE 503	Advanced Structural Analysis		3
CAE 518	Advanced Reinforced Concrete		3
CAE 525	Advanced Steel Structures		3
CAE 529	Dynamics of Structures		3
Major Elective Courses			**(9)**
Select 9 credit hours from the list of courses below [1]			9
CAE 408	Bridge and Structural Design	3	
CAE 410	Introduction to Wind and Earthquake Engineering	3	
CAE 411	Structural Analysis II	3	
CAE 435	Experimental Analysis of Structures	3	
CAE 436	Design of Masonry and Timber Structures	3	
CAE 437	Homeland Security Concerns in Engineering Systems	3	
CAE 506	Building Envelope Rehabilitation	3	
CAE 508	Advanced Bridge Engineering	3	
CAE 514	Mathematical Methods for Structural Engineering	3	
CAE 519	Structural Forensic Engineering	3	
CAE 522	Structural Model Analysis	4	
CAE 523	Statistical Analysis of Engineering Data	3	
CAE 530	Finite Element Method of Analysis	3	
CAE 535	Nonlinear Finite Element Analysis	3	
CAE 537	Homeland Security Concerns in Building Designs	3	
CAE 551	Prestressed Concrete	3	
CAE 561	Structural Reliability and Probabilistic Bases of Design	3	
CAE 586	Seismic Design of Building and Bridge Structures	3	
General Elective Courses			**(9)**
Select up to 9 credit hours of general electives [2]			9
Total Credit Hours			**30**

Minimum degree credits required: 30

1. Course substitutions can be made with advisor approval.
2. General electives can be taken from the major electives list or other courses in CAE, ARCH, EMGT, MMAE, or other disciplines with advisor approval.