MS in Construction Engineering and Management

Admission Requirements

Applicants are considered on an individual basis. Complete transcripts for all undergraduate and any graduate work must be submitted. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

- **Baccalaureate Field** Civil engineering, Construction Engineering or other engineering fields such as Mechanical and Aerospace Engineering, Industrial Engineering, Applied Mechanics or a Bachelor of Science degree in Mathematics or Physics. Students may be required to take additional engineering courses with the approval of the faculty advisors. For example: statics, strength of materials, structural analysis, properties of concrete, design of steel structures, design of concrete structures, soil mechanics, and/or water resources engineering. Students may take this course work after admission to the program. However, they will not be able to start degree requirements until they successfully complete these deficiency course work requirements.
- **Grade Point Average** At least 2.75/4.00 for the final 60 semester hours (90 quarter hours) of undergraduate study.
- **Tests Required** None.
- **Minimum English Competency Test Score**
  - **TOEFL** 80 (iBT Test), with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21; 60, with subscores of Reading 19, Listening 17, Writing 21 (revised Paper-Delivered Test), **OR,**
  - **IELTS** 6.5, with subscores of 6.0 for all four subscores, **OR,**
  - **PTE-Academic** 54, with subscores of Reading 51, Listening 47, Speaking 53, and Writing 56.
- **Letters of Recommendation** Not required for MS applicants.
- **Personal Statement** Not required for MS applicants.

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

- **Minimum Semester Hours Required** 36.
- **Course Work**

Code	Title	Hours
Required Courses		
CME 485	Construction Engineering and Management	
CME 486	Construction Equipment and Design Methods	
CME 585	Construction Engineering Project Controls	
CME 586	Construction Regulations and Organizational Management	
CME 587	Construction Estimating and Scheduling	
Elective Courses		
Group 1		
CME 400	Advanced Design of Reinforced Concrete Structures	
CME 401	Advanced Design of Metal Structures	
CME 402	Geometric Design of Highway Facilities	
CME 405	Foundation Analysis and Design	
CME 406	Bridge Design I	
CME 407	Soil and Site Improvement Methods	
CME 410	Design of Prestressed Concrete Structures	
CME 413	Design of Wood Structures	
CME 414	Design of Masonry Structures	
CME 421	Water Treatment Design	
CME 422	Wastewater Treatment Design	
CME 423	Management of Solid and Hazardous Wastes	
CME 596	Independent Study	
Group 2		
CME 440	Cities and Sustainable Infrastructure	
CME 501	Urban Transportation	
CME 503	Advanced Transportation Demand Analysis	
CME 507	Sustainable Transportation Systems	
CME 514	Sustainable Engineering	
CME 580	Infrastructure Management	
CME 594	Advanced Special Topics in Civil and Materials Engineering	
UPP 461	Geographic Information Systems for Planning and Policy	
UPP 514	Economic Analysis for Planning and Management	
UPP 542	Metropolitan Housing Planning	
UPP 553	Land Use Law	
UPP 558	Land Use Regulation and Planning	
Group 3		
IE 446	Advanced Quality Control and Reliability	
IE 461	Safety Engineering	
IE 466	Production Operation Analytics and Inventory Control	
IE 552	Applied Stochastic Processes	
IE 571	Statistical Quality Control and Assurance	
ME 422	Heating, Ventilation and Air Conditioning	
ME 424	Energy Management Solutions for Industry: Theory and Practice	
ENER 552	Design of Energy Efficient Buildings	
PA 504	Principles of Financial Management and Budgeting	
PA 535	Conflict Management	
IDS 472	Business Data Mining	
IDS 478	Regression Analysis	
IDS 552	Supply Chain Management	

IDS 573	Risk Management
IDS 476	Business Forecasting Using Time Series Methods
IDS 474	Quality and Productivity Improvement Using Statistical Methods
MGMT 553	Human Resource Management
COMM 416	Conflict and Communication
CME 594	Advanced Special Topics in Civil and Materials Engineering
CME 596	Independent Study

- **Comprehensive Examination** None.
- **Thesis, Project, or Course-Work-Only Options** Thesis, Project, or Course Work Only. Each graduate student will be assigned an academic advisor who will provide advice and guidance to the student with the pertinent information on program sequences, elective and course selections, and thesis, project, or course-based paths.
  - *Thesis*: Students must take the five required courses (20 hours), AND one elective course (4 hours from one of the three elective course groups) with the approval of the advisor. Students are required to register for CME 598 (12 hours).
  - *Project*: Students must take the five required courses (20 hours), PLUS one elective course from each of the three elective groups (12 hours) with the approval of the advisor. Students are required to register for CME 596 with their faculty advisors.
  - *Course Work Only:* Students must take the five required courses (20 hours), PLUS four elective courses (16 hours, with at least one course from each of the three elective groups) with the approval of the faculty advisor.

Note: Students may only transfer up to 4 hours of graduate-level course work that may be accepted from an accredited institution with the department's approval.