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 (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**

  **Course** | **Title**
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  **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 | Quality Control and Reliability
  IE 461 | Safety Engineering
  IE 466 | Production Planning 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.