Master of Civil Engineering

Program Overview

The Master of Civil Engineering (MCE) is designed for students with an undergraduate degree in an engineering discipline who wish to pursue a graduate degree. Students who do not have an undergraduate degree in civil engineering should consult the department website for a list of required prerequisites at https://www.ccee.ncsu.edu/academics/graduate-programs/admission/.

Admission Requirements

Prerequisites for admission to the MCE degree include an undergraduate degree in civil engineering from an accredited institution or its equivalent with an overall GPA of 3.0. The Graduate Record Exam (GRE) is automatically waived for applicants who have an engineering degree from a US institution. The TOEFL or IELTS scores (no more than two years old) are required for international applicants unless they have completed one year of full-time study at a U.S. university. You must apply for admissions to the MCE program online at https://applygrad.ncsu.edu/apply/ When completing the online application, please be sure to select the "Distance Track" version of the degree.

Degree Requirements

- Completion of 30 credit hours of graduate level courses at the 400, 500 or 700 level with an overall grade point average of 3.0. At least 24 hours must be at the 500 level or above and 400 level courses must be outside of civil engineering.
- Students are assigned an academic advisor and must work with this advisor to develop an individual Plan of Graduate Work. Some specialty areas have specific course requirements and these requirements must be met by both on campus and distance students.
- Approximately two-thirds of all credit hours should be in civil engineering with an area of emphasis.
- The remaining credit hours can be civil engineering courses or related courses from other departments.
- No thesis or on-campus residency requirement.
- All requirements for the degree must be completed within six years of enrolling in the first course approved in the Plan of Graduate Work. Students must comply with the Graduate School regulations for continuous enrollment or must request a leave of absence not to exceed one year.

Course Registration

To register for an Engineering Online course log into https://www.webtools.ncsu.edu/engronline/ and submit the registration form. Students cannot register through the University MyPack Portal system for Engineering Online courses.

A person does not have to be admitted to a degree program to enroll in an online credit course. Prior to applying to the Graduate School, a qualified individual may enroll in Engineering Online courses as a Non-Degree Studies (NDS)
student. All course prerequisites must still be satisfied. The NDS classification is designed for individuals who wish to undertake academic work but who are not currently admitted to a degree program. If the student is admitted to the MCE program, a maximum of twelve NDS credit hours may apply toward the 30 credit hour requirement if the student earns the grade of B or higher in each course.

Course Offerings

A list of distance education courses available for each semester can be found on the Engineering Online website. Full-time employed individuals can only enroll in two online courses per semester. It is highly recommended that new students enroll in one online course during their first semester.

The following courses will be available through the Engineering Online program in various semesters.

CE 501 Transportation Systems Engineering  
CE 502 Traffic Operations  
CE 509 Highway Safety  
CE 515 Advanced Strength of Materials  
CE 522 Theory and Design of Pre-stressed Concrete  
CE 523 Theory and Behavior of Steel Structures  
CE 524 Analysis and Design of Masonry Structures  
CE 526 Finite Element Method in Structural Engineering  
CE 527 Structural Dynamics  
CE 528 Structural Design in Wood  
CE 529 FRP Strengthening and Repair of Concrete Structures  
CE 536 Introduction to Numerical Methods for Civil Engineers  
CE 538 Information Technology and Modeling  
CE 549 Soil and Site Improvement  
CE 561 Construction Project Management  
CE 564 Legal Aspects of Contracting  
CE 565 Construction Safety Management  
CE 567 Risk and Financial Management in Construction  
CE 571 Physical Principles of Environmental Engineering  
CE 573 Biological Principles of Environmental Engineering  
CE 574 Chemical Principles of Environmental Engineering  
CE 576 Engineering Principles of Air Pollution Control  
CE 577 Engineering Principles of Solid Waste Management  
CE 579 Principles of Air Quality Engineering  
CE 584 Hydraulics of Ground Water  
CE 586 Engineering Hydrology  
CE 588 Water Resources Engineering  
CE 592 Special Topics in Construction Engineering  
CE 593 Special Topics in Geotechnical Engineering  
CE 594 Special Topics in Structures and Mechanics  
CE 595 Special Topics in Transportation Engineering  
CE 596 Special Topics in Water Resource and Environmental  
CE 702 Traffic Flow Theory  
CE 705 Intelligent Transportation Systems  
CE 706 Advanced Traffic Control  
CE 707 Transportation Policy and Funding  
CE 714 Stress Waves  
CE 723 Advanced Structural Dynamics  
CE 724 Probabilistic Methods of Structural Engineering  
CE 725 Earthquake Structural Engineering  
CE 726 Advanced Theory of Concrete Structures  
CE 730 Stress Waves  
CE 741 Geomechanics of Stress Deformation  
CE 742 Deformation and Instability of Soils  
CE 744 Foundation Engineering  
CE 746 Soil Dynamics and Earthquake Engineering  
CE 747 Geosynthetics in Geotechnical Engineering  
CE 751 Theory of Concrete Mixtures  
CE 755 Highway Pavement Design  
CE 757 Pavement Management Systems  
CE 759 Inelastic Behavior of Construction Materials  
CE 761 Design of Temporary Structures in Construction  
CE 762 Construction Productivity  
CE 763 Materials Management in Construction  
CE 766 Building Construction Systems  
CE 771 Physical-Chemical Water Treatment Processes  
CE 772 Environmental Exposure and Risk Analysis  
CE 774 Environmental Bioprocess Technology  
CE 793 Advanced Topics in Geotechnical Engineering  
CE 794 Advanced Topics in Structures and Mechanics  
CE 795 Advanced Topics in Transportation Engineering  
CE 799 Geotechnical Engineering  
CE 800 Advanced Topics in Transportation Engineering  
Other recommended courses  
MA 501 Advanced Mathematics for Engineers & Scientists I  
MA 502 Advanced Mathematics for Engineers & Scientists II

Course Logistics

Online courses are the same as on campus courses in terms of content, requirements and academic rigor. On campus class lectures are captured, digitized and placed on the Internet for distance students to access at any time and from any location. Students must, however, follow the on-campus class schedule in terms of submitting homework and taking exams. Course assignments, lecture notes, and handouts are made available to distance students on the course website. All in-class exams must be proctored.

Contact Information

- For more information about the MCE degree program available online, contact:

  Dr. Ranji Ranjithan, Director of Graduate Programs  
  Renee Howard, Graduate Services Coordinator  
  Department of Civil, Construction, and Environmental Engineering  
  Email: go-ceee-eol@ncsu.edu  
  Department web site: https://www.ccee.ncsu.edu/
For more information about the registration process, course offerings and course logistics, contact:

Dr. Linda Krute, Director of Distance Education Programs
College of Engineering
Telephone: 919.515.5440
Email: linda_krute@ncsu.edu
EOL web site: https://engineeringonline.ncsu.edu