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 http://www.ce.ncsu.edu/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 http://www.ncsu.edu/grad. 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, complete the registration form on the Engineering Online website at http://engineeringonline.ncsu.edu by clicking on “Registration.” Students cannot register for Engineering Online courses through the University MyPack Portal system.

A person does not have to be admitted to a degree program to enroll in an online credit course. Prior to applying to 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.
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

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-ccce-eol@ncsu.edu
  Department web site: http://www.ce.ncsu.edu

- For more information about the registration process, course offerings and course logistics, contact:

  Richard Shryock, Associate Director of Distance Education Programs
  College of Engineering
  Telephone: 919.513.3815
  Email: richard_shryock@ncsu.edu
  EOL web site: http://engineeringonline.ncsu.edu