

# Master of Civil Engineering



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

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-ccee-eol@ncsu.edu](mailto:go-ccee-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  
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EOL web site: <https://engineeringonline.ncsu.edu>