MASTER OF SCIENCE IN CIVIL ENGINEERING
CONSTRUCTION ENGINEERING AND
MANAGEMENT CONCENTRATION

The MS Program in Construction Engineering and Management is designed to prepare its graduates to effectively deliver and manage the capital facilities and infrastructure that are critical to worldwide productivity. The curriculum builds upon a student’s technical background to develop managerial and financial expertise through a mix of fundamental and advanced areas of study. The courses expose students to the activities and issues of planning, financing, procuring, constructing and managing the built environment.

CORE COURSES

AT LEAST FOUR OF THE FOLLOWING 3-CREDIT COURSES:
CIEN E4111: Uncertainty and Risk in Infrastructure Systems
CIEN E4129: Managing Engineering and Construction Processes
CIEN E4130: Design of Construction Systems
CIEN E4131: Principles of Construction Techniques
CIEN E4243: Foundation Engineering
CIEN E4132: Prevention and Resolution of Construction Disputes
CIEN E4133: Capital Facility Planning & Financing
CIEN E4134: Construction Industry Law
CIEN E4135: Strategic Management in Design and Construction
ELECTIVE COURSES

AT LEAST TWO OF THE FOLLOWING:
CIEE E4252: Environmental Engineering
CIEN E4021: Elastic and Plastic Analysis of Structures
CIEN E4022: Bridge Design and Management
ENME E4114: Mechanics of Fracture & Fatigue
ENME E4202: Advanced Mechanics
ENME E4332: Finite Element Analysis I
CIEN E4210: Forensic Structural Engineering
CIEN E4226: Advanced Design of Steel Structures
CIEN E4232: Advanced Design of Concrete Structures
CIEN E4241: Geotechnical Engineering Fundamentals
CIEN E4242: Geotechnical Earthquake Engineering
MECE E4314: Energy Dynamics of Green Buildings

QUANTITATIVE METHODS ELECTIVES:
IEOR E4003: Corporate Finance for Engineers
IEOR E4004: Optimization Models and Methods
IEOR E4007: Optimization Models and Methods (FE)
IEOR E4106: Stochastic Models

MANAGEMENT ELECTIVES:
BUSI B6801: Operations Management (from Graduate School of Business)
IEME E4310: Technology & Strategic Issues in Manufacturing Enterprises
IEOR E4000: Operations Management
IEOR E4405: Scheduling
IEOR E4418: Transportation Analytics and Logistics
Columbia’s Construction Engineering and Management Program prepares students to effectively deliver and manage the capital facilities and infrastructure that are critical to worldwide productivity. Get exposed to the activities and issues of planning, financing, procuring, constructing, and managing the built environment in a suite of graduate-level courses. Apply and discover concepts, methods, and strategies for improving the delivery and management of constructed facilities and systems.

- Always taught by real Columbia professors, never TAs
- Flexible curriculum that can be customized: Focus on geotechnical, structural, environmental, management, or quantitative methods topics – or build your own elective bundle
- Examples and case studies from current world-class projects, not just theory
- Leverage your technical expertise into management and financial expertise

“Always challenge the state-of-the-art.”

– Prof. George Deodatis, CEEM Chair

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