Construction Management

Department Information

- **Interim Department Chair:**
  Achintya Bezbaruah, Ph.D.
- **Graduate Coordinator:**
  Kalpana Katti, Ph.D.
- **Department Location:**
  Engineering 106
- **Department Phone:**
  (701) 231-7244
- **Department Web Site:**
  www.ndsu.edu/ccee/ (http://www.ndsu.edu/ccee/)
- **Application Deadline:**
  Fall: May 1; Spring: October 1 for M.S. and Master of Construction Management, November 1 for Certificate
- **Credential Offered:**
  MSCM, MCM, Graduate Certificate
- **Test Requirement:**
  GRE (M.S. applicants)
- **English Proficiency Requirements:**
  M.S.: TOEFL ibT: 81, IELTS: 7, PTE Academic 54, Duolingo 105; Master of Construction Management: TOEFL iBT: 79, IELTS: 6.5, PTE Academic: 53, Duolingo 105

Programs

The Department of Civil, Construction and Environmental Engineering offers three separate and distinct construction management graduate programs as listed below.

Master of Science in Construction Management (MSCM)

The Master of Science in Construction Management program is an on-campus, research-focused degree. The program consists of a total of 31 credits (24 credits of course work, 6 credits of research/thesis, and 1 credit of seminar). Students are expected to significantly contribute to the development and delivery of scholarly publications and to the development and submission of research grant proposals as determined by the major adviser.

Master of Construction Management (MCM)

The Master of Construction Management program is a 100% online professional program consisting of 30 credits of course work (10 courses offered within a 12-month period) and the Associate Constructor (AC) Exam. The program provides a learning experience constituting a distinct knowledge-base and a specific set of associated skills within the areas of construction estimating, scheduling, project management, finance, safety and quality, and techniques and equipment at the professional level.

Graduate Certificate in Construction Management (CCM)

The graduate certificate in Construction Management program provides a 100% online program consisting of 9 credits of course work (3 courses offered within a 12-month period) within the areas of estimating, scheduling, and project management at the professional level. These three areas constitute a body of knowledge that represents the fundamental core of construction management.

Master of Science in Construction Management (MSCM)

In addition to the Graduate School requirements, to be admitted into the program applicants must:

- Have earned a baccalaureate degree in construction, engineering, architecture, or other related discipline with a minimum CGPA of 3.0 or equivalent to attain full standing.
- Submit Graduate Record Examination (GRE) score.
- Submit a one-page “Statement of Purpose” outlining reasons for pursuing the Master of Science in Construction Management, emphasizing on research objectives and qualifications that directly relate to one or more of the “Research Interests” of the CM&E faculty.
- Submit a two-page resume.

Prospective students must submit application materials via the online application process.

Financial Assistance

For exceptional applicants, the CCEE Department may offer a graduate assistantship, which consists of a monetary stipend and a possible tuition waiver; however, student activity fees and program fees are not waived. There is no separate application process for graduate assistantships. Applicants are evaluated based on their credentials and/or experience.

Master of Construction Management (MCM)

In addition to the Graduate School requirements, to be admitted into the program, applicants must:

- Have earned a baccalaureate degree in construction, engineering, architecture, or other related discipline with a minimum CGPA of 3.0 or equivalent to attain full standing. Work experience in the construction industry can possibly be a substitute if degree is in another field.
- Submit a two-page resume.

Prospective students must submit application materials via the online application process. Applicants who are deficient in the CGPA requirement are encouraged to apply for the Graduate Certificate in Construction Management. Although successful completion of the Graduate Certificate does not guarantee acceptance into the Master of Construction Management, the Graduate Certificate will be seriously considered in application decisions related to the Master of Construction Management Program.

Financial Assistance

Graduate students in the Master of Construction Management program are not eligible for assistantships or tuition waivers.

Graduate Certificate in Construction Management (CCM)

In addition to the Graduate School requirements, to be admitted into the Graduate Certificate in Construction Management applicants must:

- Have earned a baccalaureate degree in construction, engineering, architecture, or other related discipline with a minimum CGPA of 2.75 or equivalent to attain full standing. Work experience in the construction industry can possibly be a substitute if degree is in another field.
- Submit a two-page resume.

Prospective students must submit application materials via the online application process.

Financial Assistance

Graduate Certificate in Construction Management Program students are not eligible for assistantships, tuition waivers, or financial aid.

Master of Science in Construction Management (MSCM)

The M.S.in Construction Management requires a total of 31 graduate-level credits (24 credits of course work, 6 credits of research/thesis, and 1 credit of seminar) and a thesis. The thesis requires the creation and presentation of new knowledge in providing a solution to a problem. Prior to submitting a thesis to the graduate student's supervisory committee, the thesis must be reviewed by a departmentally approved external editor. All costs associated with external review are the responsibility of the graduate student.

An example plan of study for the M.S. in Construction Management is shown below:

Code	Title	Credits
CM&E 790	Graduate Seminar	1
CM&E 603	Scheduling and Project Control	3
CM&E 605	Construction Support Operations	3
CM&E 701	Construction Technology and Equipment	3
CM&E 711	Construction Cost Estimating	3
CM&E 712	Construction Management	3
600, 700 or 800-level electives *		9
CM&E 798	Master's Thesis	6
Total Credits		**31**

* Electives may be any 600, 700, or 800-level courses offered at NDSU determined by the student and the major faculty adviser. A minimum cumulative grade point average (CGPA) of 3.0 must be achieved to receive the M.S. degree.

Master of Construction Management (MCM)

The Master of Construction Management degree consists of thirty (30) credits of course work and AC Examination. The following ten (10) courses constitute the thirty (30) credits of course work required for the degree.

Code	Title	Credits
CM&E 603	Scheduling and Project Control	3
CM&E 605	Construction Support Operations	3
CM&E 660	Infrastructure Management	3
CM&E 701	Construction Technology and Equipment	3
CM&E 703	Advanced Project Planning and Control	3
CM&E 711	Construction Cost Estimating	3
CM&E 712	Construction Management	3
CM&E 715	Construction Specifications and Contracts	3
CM&E 725	Decision Making and Risk Analysis	3
CM&E 740	Financial and Economic Concepts for Construction Managers	3
Total Credits		**30**

Schedule of Courses

Summer Semester
CM&E 603 Scheduling and Project Control
CM&E 660 Infrastructure Management

Fall Semester
CM&E 703 Advanced Project Planning and Control
CM&E 712 Construction Management
CM&E 715 Construction Specifications and Contracts
CM&E 740 Financial and Economic Concepts for Construction Managers

Spring Semester

CM&E 605 Construction Support Operations
CM&E 701 Construction Technology and Equipment
CM&E 711 Construction Cost Estimating
CM&E 725 Decision Making and Risk Analysis

Graduate Certificate in Construction Management (CCM)

The certificate program consists of nine credits encompassing the following three (3) courses:

Code	Title	Credits
CM&E 603	Scheduling and Project Control	3
CM&E 711	Construction Cost Estimating	3
CM&E 712	Construction Management	3
Total Credits		**9**

Only grades of C or higher will satisfy requirements for certificate completion with a CGPA of 3.0 or greater. Courses used to satisfy the Graduate Certificate requirements cannot be older than three years at the time the certificate completion is verified.

FACULTY

Eric Asa, Ph.D.
Associate Professor
University of Alberta, 2002
Research Interests: Infrastructure and Assets Management, Construction Materials, Engineering Education, Computational Modeling

Abdul-Aziz Banawi, Ph.D.
Assistant Professor
University of Pittsburgh, 2013

Research Interests: Life Cycle Assessment, Building Information Modeling, Building Construction - Virtual Reality, Green Buildings and Sustainability, Lean Construction and Six-Sigma

Zhili (Jerry) Gao, Ph.D., P.E., C.P.C
Associate Professor and Associate Chair
Iowa State University, 2004
Research Interests: Lean Construction, Virtual Design and Construction (Visualization, BIM Development and Implantation), Advanced Concrete Techniques (Sustainable Concrete, New Concrete Materials and Structures)

Youjin Jang, Ph.D.
Assistant Professor
Seoul National University, 2017
Research Interests: Construction Automation, Human-Robot Collaboration, Human-Building Interaction, Sustainability, Data Analytics, Data-driven Decision Making, Emerging Technologies Adoption

Chau Le, Ph.D.
Assistant Professor
Texas A&M University, 2021
Research Interests: Applications of Data Analytics and Artificial Intelligence, Alternative Contracting Methods, Sustainable and Resilient Infrastructure, Emerging Technologies and Robotics, Human Safety and Health

Yao Yu, Ph.D.
Assistant Professor
North Carolina A&T State University, 2014
Research Areas: Building Energy Conservation Technology, Computational Airflow Modeling, and HVAC System Design and Simulation