

## CONSTRUCTION MANAGEMENT BS

### Construction Management

College of Science, Engineering & Technology  
 Department of Construction Management  
 302 Wiecking Center • 507-389-6385  
 Website: [cset.mnsu.edu/cm](http://cset.mnsu.edu/cm)

Chair: Brian Wasserman DIT

Faculty: Mohamed Diab PhD; Scott Fee PhD; Seong Jin Kim PhD; Leah Roue PhD

**Accreditation.** American Council of Construction Education (ACCE).

The Construction Management program prepares graduates for success in the rapidly changing construction industry. Coursework emphasizes management with an additional focus on technology that is specific to the construction industry. The Construction Management program provides students with opportunities to gain applied skills and knowledge in the areas of estimating, planning, scheduling and project management, as well as developing strong interpersonal, speaking and organizational skills allowing them to successfully pursue careers in small and large commercial, residential and industrial environments.

**Academic Map/Degree Plan at [www.mnsu.edu/programs/#All](http://www.mnsu.edu/programs/#All)**

**POLICIES/INFORMATION**

**Admission to Major** is granted by the College of Science, Engineering and Technology. Admission requirements are:

- A minimum of 32 earned semester credit hours
- Overall GPA of "C" 2.0
- Completion of CM 111 "C" (2.0)
- Completion of ENG 101, grade of "C" (2.0) or above
- Completion of MATH 112 & MATH 113 or MATH 115, grade of "C" (2.0) or above
- Completion of CM 297

Contact the CSET Advising Center for application procedures.

**GPA Policy.** A minimum grade of "C" (2.0) is required in all courses listed in the Construction Management BS Degree.

**P/N Grading Policy.** All courses in the major must be taken for letter grade except where P/N is the only option.

**CONSTRUCTION MANAGEMENT BS**

Degree completion = 120 credits

**Required General Education**

- ECON 201 Principles of Macroeconomics (3)
- ECON 202 Principles of Microeconomics (3)
- ECON 207 Business Statistics (4)
- ENG 101 Composition (4)
- ENG 271W Technical Communication (4)
- MATH 115 Precalculus Mathematics (4)

Analytical Science Courses

(choose 3-4 credits)

- PHYS 101 Introductory Physics (3)
  - PHYS 211 Principles of Physics I (4)
- (choose remaining credits - Choose 4-5 credits)
- CHEM 201 General Chemistry I (5)
  - GEOL 100 Our Geologic Environment (3-4)

**Major Common Core**

- ACCT 200 Financial Accounting (3)
- ACCT 210 Managerial Accounting (3)
- BLAW 200 Legal, Political, and Regulatory Environment of Business (3)
- BLAW 476 Construction and Design Law (3)
- CM 108 Construction Work Experience (1)
- CM 111 Introduction to Construction Management (1)

- CM 120 Construction Graphics (3)
- CM 130 Construction Documents (2)
- CM 210 Construction Materials and Methods I (3)
- CM 220 Construction Materials and Methods II (3)
- CM 222 Introduction to Statics and Mechanics of Materials (3)
- CM 271 Civil Engineering Measurements (2)
- CM 297 Construction Professional Practice (1)
- CM 300 Construction Safety (3)
- CM 310 Estimating I (3)
- CM 330 Planning and Scheduling (3)
- CM 340 Construction Project Management (3)
- CM 350 Mechanical and Electrical Systems for Construction (3)
- CM 380 Construction Equipment Management (3)
- CM 410 Estimating II (3)
- CM 450 Construction Capstone Project (3)
- CM 492 Construction Management Seminar (3)
- CM 497 Internship (1-12)
- IT 101 Introduction to Information Systems (3)
- MGMT 200 Introduction to MIS (3)
- MGMT 330 Principles of Management (3)

Minimum of 3 credits required for CM 497

**Major Restricted Electives**

Select one of two classes. (choose 3 credits)

- FINA 362 Business Finance (3)
- MRKT 310 Principles of Marketing (3)

**Required Minor: None.**

**COURSE DESCRIPTIONS**

**CM 108 (1) Construction Work Experience**

Construction Work Experience must precede the internship program. The work may be direct application of technical or craft training or beginning exposure to managerial operations. The credit may be waived for experience acquired prior to enrolling at Minnesota State University Mankato.  
 Fall, Spring, Summer

**CM 111 (1) Introduction to Construction Management**

Overview of academic preparation and career opportunities in the fields of Construction Management. Skills needed for estimating, scheduling, project management and field supervision will be previewed with an emphasis on future trends in the industry.  
 Fall, Spring

**CM 120 (3) Construction Graphics**

Emphasis on plan reading, basic sketching and drawing techniques, graphic vocabulary, detail hierarchies, scale, content, notes and specifications, reference conventions, and computer applications.  
 Fall, Spring

**CM 130 (2) Construction Documents**

Basic understanding of the plans and specifications for construction projects. Emphasis on interpretation of bidding and contractual documents, conditions of the contract, plans/working drawings; and applications of existing and new technology preparing students for the future.  
 Fall, Spring

**CM 210 (3) Construction Materials and Methods I**

Understand how construction affects professional industry and society, present state of the profession and its future. Learn about the various materials used in construction—the composition, properties, standard designations, sizes, gradations and testing techniques. Understand changes in technology of building construction materials.  
 Prerequisite: CM 111, CM 120, CM 130, IT 101  
 Fall, Spring

**CM 220 (3) Construction Materials and Methods II**

Fundamentals of building construction and their applications in construction systems and utilities. Application of the principles of building science to construction sites; relationship between technology and innovations in methods, sustainable building practices and "green" building requirements.  
 Prerequisite: CM 210  
 Fall, Spring

## CONSTRUCTION MANAGEMENT CONTINUED

---

### **CM 222 (3) Introduction to Statics and Mechanics of Materials**

Course introduces the design theory and applied principles of force equilibrium, stress and strain, shear, bending moments, force diagrams, deformations of beams, and stress/strain analysis.

Prerequisite: PHYS 101, MATH 113 or MATH 115 or MATH 121

Fall, Spring

### **CM 271 (2) Civil Engineering Measurements**

Basic civil engineering measurements as relates to construction layout, including distances, angles, bearings, elevations, mapping and positioning.

Prerequisite: MATH 113 or MATH 115 or MATH 121

Fall, Spring

### **CM 297 (1) Construction Professional Practice**

Principles of professional conduct, ethical codes and best practices are applied to the development of a portfolio and presentation. Students will sit for interviews, set career goals, and begin building a professional network.

Prerequisite: CM 108, CM 210

Fall, Spring

### **CM 300 (3) Construction Safety**

Principles and practices of construction safety, health, and loss control. Emphasis is on hazard recognition, control procedures and management systems for measuring and evaluating loss control performance in the construction industry.

Prerequisite: CM 210

Fall, Spring

### **CM 310 (3) Estimating I**

This course covers types of estimates and their uses, the basics of quantity take-off, labor and equipment productivity and basic computer applications.

Prerequisite: MATH 113 or MATH 115 or MATH 121

Fall, Spring

### **CM 330 (3) Planning and Scheduling**

Understanding project planning, scheduling and control models with emphasis on the critical path methods. Introductions to the techniques used in the industry utilizing commercial software on personal computers, highlighting the importance of analysis of schedules; considering and understanding schedule alternatives will be stressed.

Prerequisite: ENG 271W, CM 220

Fall, Spring

### **CM 340 (3) Construction Project Management**

This course examines the project management framework, including key terminology, project management context, and project management processes. Topics include project management knowledge areas, life cycles, and organizational designs. Different project delivery methods will be discussed and the roles of project stakeholders will be identified and analyzed.

Prerequisite: CM 220, CM 222, CM 297

Fall, Spring

### **CM 350 (3) Mechanical and Electrical Systems for Construction**

Design concepts of plumbing, HVAC, and electrical and control systems are analyzed for attributes that affect the design and construction processes and the performance of completed structures.

Prerequisite: CM 220

Fall, Spring

### **CM 380 (3) Construction Equipment Management**

This course provides understanding of the different building and civil construction equipment's functions; analysis of equipment costs, production, methods of equipment selection and safety requirements including heavy equipment. Reading and understanding highway construction plans.

Prerequisite: CM 220, CM 300

Fall, Spring

### **CM 398 (0) CPT: Co-Operative Experience**

Curricular Practical Training: The Co-Operative Experience is a zero-credit, full-time practical training experience. Please contact an advisor in the Construction Management program for details.

Fall, Spring, Summer

### **CM 410 (3) Estimating II**

This course covers types of estimates and their uses, pricing and price databases, labor and equipment productivity, proposal presentations, computer applications in estimating and research in sustainable construction.

Prerequisite: CM 310, CM 330

Fall, Spring

### **CM 450 (3) Construction Capstone Project**

The course will involve the students in a Capstone Project in teams representing a construction company. This is a project where students will integrate the coursework concept of the core program through research, application and presentation.

Prerequisite: CM 340, CM 410

Fall, Spring

### **CM 492 (3) Construction Management Seminar**

A seminar course that involves a critical evaluation of an area in the construction management discipline and/or industry. Topics vary from year to year. Students are usually required to make a presentation to the class.

Prerequisite: Senior Standing or instructor permission

Fall, Spring

### **CM 497 (1-12) Internship**

Prerequisite: CM 300, CM 310, CM 330

Fall, Spring, Summer

### **CM 499 (1-4) Individual Study**

An in-depth study on a topic of particular interest to the student. Project must be approved by project supervisor and department chairperson.