

CONSTRUCTION MANAGEMENT

Construction Management

College of Science, Engineering & Technology
Department of Construction Management
302 Wiecking Center • 507-389-6385
www.MankatoConstructionDegree.com

Accreditation. American Council of Construction Education (ACCE).

The Construction Management major prepares graduates for success in the rapidly-changing construction industry. Course work emphasizes management with an additional focus on technology and systems specific to the construction industry. Typical entry-level positions include field manager, assistant superintendent, project engineer, scheduler, assistant estimator, project cost controller and safety director.

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.

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.

Pre: 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.

Pre: 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.

Pre: 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.

Pre: 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.

Pre: 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.

Pre: 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.

Pre: MATH 113 or MATH 115 or MATH 121

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.

Pre: 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.

Pre: 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.

Pre: 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.

Pre: CM 220, CM 300

Fall, Spring, Summer

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.

Fal, 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.

Pre: 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 course-work concept of the core program through research, application and presentation.

Pre: 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.

Pre: Senior Standing or instructor permission

Fall, Spring

CM 497 (1-12) Internship

Pre: CM 300, CM 310, CM 330

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.