## Construction Management

**College of Science, Engineering & Technology**  
**Department of Interior Design & Construction Management**  
354 Wiecking Center 507-389-6385  
www.cset.mnsu.edu/idcm  
Chair: Scott Fee

### Construction Management Major: General Emphasis

The Construction Management general emphasis prepares graduates for success in the rapidly changing construction industry. Coursework emphasizes management (including a required minor in the College of Business) 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.

### Construction Management Major: Facilities Planning and Management Emphasis

The Facilities Planning and Management emphasis enables students to successfully design, manage, and maintain both small- and large-scale commercial and institutional environments. Coursework integrates principles of behavioral and engineering sciences, business administration, design, and construction management.

Admission to Major is granted by the College of Science, Engineering and Technology. Minimum University admission requirements are:
- A minimum of 32 earned semester credit hours
- A minimum cumulative GPA of 2.00

Contact the CSET Advising Center for application procedures.

### CONSTRUCTION MANAGEMENT BS

<table>
<thead>
<tr>
<th>Core (28 credits):</th>
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<tbody>
<tr>
<td>CM 111 Intro to Design &amp; Construction Management (1)</td>
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<tr>
<td>CM 212 Surveying &amp; Site Planning (2)</td>
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<tr>
<td>CM 250 Mechanical &amp; Electrical Systems (3)</td>
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<tr>
<td>CM 291 Architectural Graphics (3)</td>
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<tr>
<td>CM 311 Equipment Management (2)</td>
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<tr>
<td>CM 312 Foundations &amp; Concrete Structures (3)</td>
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<tr>
<td>CM 324 Project Management (3)</td>
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<tr>
<td>CM 345 Construction Systems Management (3)</td>
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<td>CM 397 Internship (3)</td>
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### Required Support Courses (31-32 credits):

- CM 497 Internship (3)
- ID 483 Procedures and Practices in I.D. (3)
- CM 412 Surveying & Site Planning
- CM 413 Cost Estimating & Bidding (3)
- CM 414 Computerized Estimating & Bidding (3)
- CM 424 Construction Safety & Loss Control (2)
- CM 445 Construction Systems Management (3)

### Required for Construction Management General Emphasis (14 credits):

- CM 106 Construction Experience (1)
- CM 312 Foundations & Concrete Structures (3)
- CM 497 Internship (3)

### Required Support Courses (13-14 credits):

- BED 346 Business Communications (3)
- ENG 271 Technical Communications (4)
- COMS 101 Introduction to Microcomputers (3)
- MATH 115 Pre-Calculus (4)
- BLAW 476 Construction and Design Law

### Required Minor: Business Administration (31 credits):

- Required General Education (10 credits):
- MATH 115 Pre-Calculus (4)
- ECON 201 Principles of Macroeconomics (3)
- ECON 202 Principles of Microeconomics (3)

Completion of the above General Education courses does not completely satisfy General Education Requirements.

### FACILITIES PLANNING AND MANAGEMENT EMPHASIS

This emphasis currently exceeds the minimum 128 credits required for graduation. Please contact an advisor for assistance with course selection.

### Required for Facilities Planning and Management Emphasis (26 credits):

- ID 282 Interior Design Portraiture (3)
- ID 283 Interior Design Lighting & Color (3)
- ID 291 History of the Decorative Arts II (3)
- ID 372 Interior Design Resources (3)
- ID 382 Interior Design Studio II (4)
- ID 481 Interior Design Studio III (4)
- ID 483 Procedures and Practices in I.D. (3)
- CM 497 Internship (3)

### Required Support Courses (31-32 credits):

- FINA 100 Personal Financial Management (3) OR
- FINA 362 Business Finance (3)
- FINA 477 Real Estate (3)
- MET 423 Ergonomics and Work Measure (4)
- BLAW 200 Legal, Political and Regulatory Environment of Business (3)
- ACCT 200 Financial Accounting (3)
- ACCT 210 Managerial Accounting (3)
- BLAW 476 Construction and Design Law (3)
- COMS 101 Introduction to Microcomputers (3)
- STAT 154 Elementary Statistics (3)

Select one of the following (3-4 credits):

- MET 407 Facility Planning (4)
- RPLS 379 Management of Parks and Recreation Facilities (3)

### Required Minor: None

### Required General Education:

- STAT 154 Elementary Statistics (3)

### POLICIES/INFORMATION

GPA Policy. A minimum grade of "C" is required in all courses.

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

For interior design students, the department reserves the right of acquisition and exhibition of work completed in the studios under the guidance of the interior design faculty.

### COURSE DESCRIPTIONS

- **CM 106 (1) Construction Experience**  
  Construction Experience consists of at least 15 weeks of work in the construction industry and must precede the internship program. This credit may be waived for experience acquired prior to enrolling at Minnesota State University, Mankato.

- **CM 111 (1) Introduction to Design & Construction Management**  
  Overview of academic preparation and career opportunities in the fields of: Construction Management; Facilities Planning and Management; Historic Restoration and Preservation; and Interior Design.

- **CM 212 (2) Surveying & Site Planning**  
  Basic surveying as related to the layout of construction work sites, focusing on measurement of distances, angles, and elevations, and making selected computations. Pre: MATH 115
**CONSTRUCTION MANAGEMENT**

CM 215 (3) Fundamentals of Estimating
Covers principles of quantity takeoff including identification of symbols and trigonometric computations of materials from construction blueprints. Includes commercial and residential types of construction plans.
Pre: MATH 115 (or concurrently), CM 111 and 281 (or concurrently)

CM 216 (3) Construction Methods
Processes utilized in material handling and installation are examined for their effect on managing design and construction projects. Scheduling concepts are studied for patterns to yield higher productivity in the project management process.
Pre: CM 111 (or concurrently)

CM 248 (2) Contract Documents
Basic understanding of the plans and specifications for construction projects. Emphasis on interpretation of bidding and contractual documents, conditions of the contract, technical specifications, quantity takeoffs, and the plans/working drawings.
Pre: CM 111 and 281 (or concurrently)

CM 250 (3) Mechanical & Electrical Systems
Design concepts of heating, plumbing, electrical and control systems are analyzed for attributes that affect the design and construction processes and the performance of completed structures.
Pre: CM 111 (or concurrently)

CM 281 (3) Architectural Graphics
Principals and practices of plan reading, introduction to architectural hand drafting and CAD, architectural symbols, vocabulary, lettering and three-dimensional illustration techniques.

CM 311 (2) Equipment Management
Study of equipment used in the construction industry with emphasis on equipment selection and cost factors involved in owning and operating equipment.
Pre: CM 111 and 216

CM 312 (3) Foundations & Concrete Structures
Soil identification and testing methods are examined to identify design concepts and construction circumstances that can affect projects. Concrete design and workmanship principles are studied for their effect on quality and durability of the built environment. Foundation design principles are examined for their effect on scheduling, equipment selection and project success.
Pre: CM 216 (or concurrently)

CM 413 (3) Cost Estimating & Bidding
Advanced application of procedures and theory in formulating estimates on highway, grading and utility projects. Study includes job selection, estimating production, compilation of costs, the final preparation of bids, and ethics in estimating and bidding.
Pre: CM 215, 216, 248 and 311 (Pre 311 waived for FP & M and HR & P)

CM 414 (3) Advanced Estimating and Scheduling
The process of construction estimating is extended by the use of computers together with specialized construction software packages to increase job productivity. Software utilized includes commonly used packages in the construction industry on workstations.
Pre: CM 311, COMS 101, ACCT 210

CM 424 (2) Construction Safety and Loss Control
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.

CM 445 (3) Construction Systems Management
This course encompasses an overview of the operations of a firm relevant to strategic management. Identified and analyzed are the positions and roles of construction management personnel and their interrelationship with key individuals external to the company. Global issues impacting management are discussed.
Pre: CM 413 (or concurrently), ACCT 210

CM 497 (1-12) Internship

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.