CONSTRUCTION MANAGEMENT

Construction Management
College of Science, Engineering & Technology
Department of Construction Management
354 Wrecking Center 507-389-6385
www.MankatoConstructionDegree.com

Construction Management Major. 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.

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 & 113 or Math 115, grade of “C” (2.0) or above

Contact the CSET Advising Center for application procedures.

POLICIES/INFORMATION

Completion of CPC Exam. All students are required to sit for the “Certified Professional Constructor Exam” prior to graduation.

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

Required General Education
ECON 201 Principles of Macroeconomics (3)
ECON 202 Principles of Microeconomics (3)
ENG 101 Composition (4)
MATH 115 Precalculus Mathematics (4)
STAT 154 Elementary Statistics (3)
Lab Based Science Courses (8 credits)
(Choose 3-4 credits)
PHYS 101 Introductory Physics (3)
PHYS 211 Principles of Physics I (4)
(Choose Remaining 4-5 credits)
CHEM 201 General Chemistry I (5)
GEOL 100 Our Geologic Environment (4)

Major Common Core
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 271 Civil Engineering Measurements (2)
CM 300 Construction Safety (3)
CM 310 Estimating I (3)
CM 330 Planning and Scheduling (3)
CM 350 Mechanical and Electrical Systems (3)
CM 390 Structural Analysis (3)
CM 410 Estimating II (3)
CM 440 Project Management (3)
CM 450 Project Development (3)
CM 492 Construction Management Seminar (3)
CM 497 Internship (3)

Major Restricted Electives
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)
ENG 271 Technical Communication (4)
IT 101 Introduction to Information Systems (3)
MET 222 Introduction to Statics and Mechanics of Materials (3)
MGMT 200 Introduction to MIS (3)
MGMT 330 Principles of Management (3)
Select one of two classes (3 credits)
FINA 362 Business Finance (3)
MRKT 310 Principles of Marketing (3)

Required Minor: None.

COURSE DESCRIPTIONS

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, 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; 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. Learn history of construction methods, present state of the profession and its future. Analyze applications of construction systems and utilities. Understand changes in technology of building construction, including innovations in methods.
Pre: CM 111, CM 120, CM 130, IT 101
Fall, Spring

CM 220 (3) Construction Materials and Methods II
Fundamentals of building construction, including classification of materials and project delivery systems; application of principles of building science to construction sites; relationship between technology and new construction; innovations in materials, including sustainable building practices and “green” buildings.
Pre: CM 210
Fall, Spring

CM 222 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.
PHYS 101, MATH 113 or MATH 115
Fall, Spring

2011-2012 Undergraduate Bulletin
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<tr>
<td>CM 271</td>
<td>Civil Engineering Measurements</td>
<td>Basic civil engineering measurements as relates to construction layout, including distances, angles, bearings, elevations, mapping and positioning.</td>
<td>Pre: MATH 113 or MATH 115</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 300</td>
<td>Construction Safety</td>
<td>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.</td>
<td>Pre: CM 210</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 310</td>
<td>Estimating I</td>
<td>This course covers types of estimates and their uses, the basics of quantity take-off, labor and equipment productivity and basic computer applications.</td>
<td>Pre: MATH 113 or MATH 115</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 330</td>
<td>Planning and Scheduling</td>
<td>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.</td>
<td>Pre: ENG 271, CM 220</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 350</td>
<td>Mechanical and Electrical Systems for Construction</td>
<td>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.</td>
<td>Pre: CM 220</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 390</td>
<td>Structural Analysis and Design</td>
<td>Structural analysis and design principles for construction managers, including different types of building loads and their effects upon the various materials used by architects and/or engineers. Analysis techniques will focus on structural members utilizing steel, wood and reinforced concrete materials.</td>
<td>Pre: CM 222 or MET 222</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 410</td>
<td>Estimating II</td>
<td>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.</td>
<td>Pre: CM 310, CM 330</td>
<td>Fall, Spring</td>
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<td>CM 440</td>
<td>Construction Project Management</td>
<td>This course encompasses an overview of the operations of a firm relevant to project management and cost controls. The positions and roles of construction management personnel are identified and analyzed. The use of computers will be incorporated into the submittal and transmittal processes.</td>
<td>Pre: CM 300, CM 310, CM 330</td>
<td>Fall, Spring</td>
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<td>CM 450</td>
<td>Construction Project Development</td>
<td>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.</td>
<td>Pre: CM 350, CM 390, CM 440</td>
<td>Fall, Spring</td>
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<tr>
<td>CM 492</td>
<td>Construction Management Seminar</td>
<td>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.</td>
<td>Pre: Senior Standing or instructor permission</td>
<td>Fall, Spring</td>
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<td>CM 497</td>
<td>Internship</td>
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<td>Pre: CM 310, CM 300</td>
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<td>CM 499</td>
<td>Individual Study</td>
<td>An in-depth study on a topic of particular interest to the student. Project must be approved by project supervisor and department chairperson.</td>
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