

Minnesota State University Moorhead

CM 350: Structural Analysis

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:

CM 335 - Estimating II-Pricing and Productivity AND MATH 142 - Pre-Calculus

Corequisites: None

MnTC Goals: None

Students will understand fundamental concepts for the design and construction of structures, both temporary and permanent. Students will demonstrate knowledge of design processes by appropriate selection of structural members for given loading conditions. Topics include beam and column design for both structural steel and wood, tributary loads, scaffolding applications in construction, concrete formwork design, bridge construction, and temporary falsework applications.

B. COURSE EFFECTIVE DATES: 02/02/2017 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Analysis and Design of Construction Systems
2. Construction Methods and Materials

D. LEARNING OUTCOMES (General)

1. Students will understand the fundamental concepts and terminology associated with structural design.
2. Students will demonstrate knowledge lifting and hoisting systems, specifically addressing many crane parameters, including safety, load calculations, lifting radius, and other properties.
3. Students will have a fundamental understanding of the design process through applications of beam (steel and wood) design and concrete formwork design.
4. Students will practice oral communication through class presentations.
5. Students will understand the different types of bridges and their applications.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted