

Catalog Description:

Design of metal structures, behavior of members and their connections, theoretical, experimental and practical basis for proportioning members. Prerequisite CEMM 205, Structural Analysis I.

Required Textbooks:

1. Jack C. McCormac and J.K. Nelson, "Jr., Structural Steel Design LRFD Method", third edition, Prentiss Hall 2003, ISBN: 0130479594.
2. "LRFD Manual of Steel Construction", third edition, American Institute of Steel Construction (AISC) 2001: ISBN 1-56424-051-7

Instructor:

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Objectives:

This is the first course on the design of metal structures. It is aimed at introducing the students to the design philosophies used in current practice. It brings together the techniques of structural analysis learned in previous courses and the techniques used to design safe and serviceable structures with emphasis on structural steel design.

Topics:

1. Introduction (Properties of Structural Steel, Design Methods, Loads and Load Combinations).
2. Tension Members
3. Compression Members (Columns).
4. Flexural Members (Beams).
5. Simple Bolted and Welded Connections.
6. Members with Combined Axial Load and Flexure.
7. Composite Beams and other topics (if progress permits).

Design Problems

Homework will usually consist of design problems. These are essential to understanding the course material and completing the exams. These often involve sketches, calculations, and descriptions, so organization, clarity and neatness are important. A course project will involve the design of a building structure. Students may work together to solve a problem, but each student must submit the complete assignment. Some homework will involve spreadsheets which must be submitted in (save as) Excel v5/v7. Some homework will be graded. Late homework is penalized 20% per day. Justified absences may be made up when the instructor's approval is obtained.

Grading:

Midterm Exams	50%
Final Exam	25%
Graded Homework	25%