

# 53:134 Structural Design II (Steel Structures) Spring 2006

**Instructor:** Jasbir S. Arora  
Professor, Department of Civil and Env. Engineering  
4110 Seamans Center  
The University of Iowa  
Phone: (319) 335-5658  
Email: [Jasbir-Arora@uiowa.edu](mailto:Jasbir-Arora@uiowa.edu)

**Lecture:** Mon., Wed. and Fri. 9:30 AM - 10:20 AM  
3026 Seamans Center

**Office Hours:** Tues. and Thur. 10:45 – 11:45 AM  
4110 Seamans Center

**TA:** Rahul Sharma, 1131 SC  
Email: [Rahul-Sharma@uiowa.edu](mailto:Rahul-Sharma@uiowa.edu)  
Office Hours: Tues. and Thur. 4:00 – 5:30 PM

**Textbooks:** *Introduction to Structural Analysis & Design*  
S.D. Rajan, John Wiley & Sons, Inc., 2001

*Manual of Steel Construction, Load & Resistance Factor Design*, 3<sup>rd</sup> Edition, AISC, Inc., 2001

**Reference:** *LRFD Steel Design*, Third Edition  
William T. Segui, Thomson, CA 2003

**Prerequisite:** Principles of Structural Engineering (53:033)

**Grading:**

Homework	25%
Midterm Exams	40%
Final Exam	35%

# **53:134 Structural Design II (Steel Structures)**

## **Spring 2006**

### **Course Learning Objectives**

1. Design of steel members for combined bending and axial loads.
2. Analysis of indeterminate structures: force method, slope deflection method, direct stiffness method.
3. Design of continuous beams.
4. Design of indeterminate trusses
5. Design of frames.

# **53:134 Structural Design II (Steel Structures)**

## **Spring 2006**

### **Course Schedule Tentative (Revised 1-20-06)**

**Week 1** (1/18 - 1/20/06): Introduction; Review of determinate structures

**Week 2** (1/23 - 1/27): Force method for indeterminate structures

**Week 3** (1/30 - 2/3): Force method for indeterminate structures

**Week 4** (2/6 – 2/10): Slope-deflection method

**Week 5** (2/13 – 2/17): Slope-deflection method

**Week 6** (2/20 – 2/24): Direct stiffness method

**Week 7** (2/27 – 3/3): Direct stiffness method – Exam 1

**Week 8** (3/6 – 3/10): Design of indeterminate trusses; review of tension/compression design

**Week 9** (3/13 – 3/17): **Spring Break**

**Week 10** (3/20 – 3/24): Combined bending/axial load

**Week 11** (3/27 – 3/31): Combined bending/axial load

**Week 12** (4/3 – 4/7): Combined bending/axial load – Exam 2

**Week 13** (4/10 – 4/14): Design of continuous beams

**Week 14** (4/17 – 4/21): Design of frames

**Week 15** (4/24 – 4/28): Design of frames

**Week 16** (5/1 – 5/5): Design of frames; Course review

**Final Exam, Period 10: Tuesday May 9, 2006, 2:15 – 4:15PM**