

53:134 Structural Design II (Steel Structures)
Spring 2006 (Lecture Summary)
Week 12 (4/3 - 4/7/06)

4/3/06

- ◆ Review of Design of Members for Compression Loads: Part 4 of the LRFD Manual: Design of compression members. Chapter E, Appendix E, Commentary E of Specifications.
- ◆ Design for compression:
 - Example 1. Calculate design strength of W14x74 section, A992 steel, length = 20'.
 - Example 2. Manual example on page 4-7.
- ◆ Midterm Exam 2: Due on 4/7/06, Friday.

4/5/06

- ◆ Design for flexure - beams.
 - Basic beam theory. Distinction between a plate girder and a beam.
 - Elastic moment strength.
 - Plastic moment strength.
- ◆ Design for shear - shear design strength.
- ◆ Lateral torsional buckling - compact and noncompact sections.
- ◆ **Read:** Part 5 of the LRFD Manual; Chapter F, Appendix F, Commentary F of Part 16 (LRFD Specifications).

4/7/06

- ◆ Review of material on design for flexure.
- ◆ Shear failure modes.
- ◆ Global buckling of columns, slenderness ratio.
- ◆ Local buckling - flange and web local buckling; width-thickness ratios.
- ◆ Discussion of animations of buckling failure modes.
- ◆ **Read:** Part 5 of the LRFD Manual; Chapter F, Appendix F, Commentary F of Part 16 (LRFD Specifications).