53:134 Structural Design II (Steel Structures)
Spring 2006 (Lecture Summary)
Week 3 (1/30 - 2/3/06)

1-30-06
♦ Discuss HW #2 (5.1.4): Analysis of indeterminate beam using the force method. Discuss the notation for moments; calculation of $M(x)$ and $m(x)$ for each section; compatibility condition. Shear and moment diagrams.
♦ Force method: for indeterminate frames - one redundant case. Examples 5.1.6, 5.1.7 on pages 262 - 267.
♦ **Read**: Chapter 5, Section 5.1.2 of the text.
♦ **HW#3**: 5.1.16 - analysis of an indeterminate frame.

2-1-06
♦ Discuss HW #3 (5.1.16): Analysis of indeterminate frames using the force method. Shear and moment diagrams.
♦ Force method: analysis of indeterminate trusses - one redundant case. Examples of externally and internally indeterminate trusses.
♦ **Read**: Chapter 5, Section 5.1.3 of the text.
♦ **HW#4**: 5.1.21

2-3-06
♦ Force method: analysis of indeterminate beams, frames and trusses - two-redundant case.
- **Beams and Frames**: Compatibility conditions when the two reaction forces are taken as redundant - explanation.

- **Beams and Frames**: Compatibility conditions when the one reaction force and one reaction moment are taken as redundant - explanation; rotational compatibility. Example 5.1.10

- **Trusses**: Compatibility conditions when two redundant member forces are taken as unknowns.

- **Read**: Section 5.1.4

- **HW#5**: 5.1.28