

## CE122- DESIGN OF STEEL STRUCTURES- Spring 2007

Web Page for the course is at: <http://www.ce.berkeley.edu/~astaneh>

### General Information:

Course: CIVIL ENGINEERING 122 (CE122)

Course Title: Design of Steel Structures, 3 Units

Time and Location: Lectures: MW 1-2 PM in 406 Davis Hall, Lab: Wed., 2-5PM, 502 Davis Hall

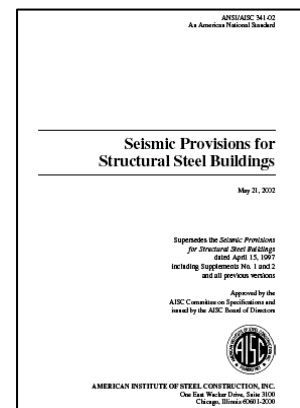
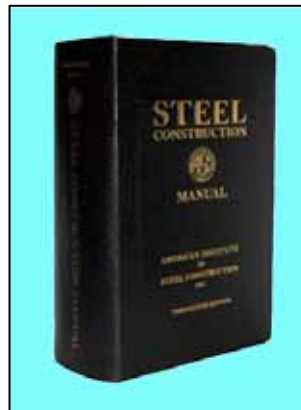
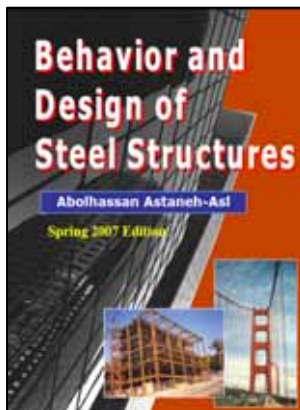
Instructor's Name and Office Location: Prof. A. Astaneh, 781 Davis Hall

Instructor's Office Hours: Posted on: [www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh)

GSI's Name and Office Hours: (will be posted at the start of the semester)

GSI's Office Hours:(will be Posted on: [www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh))

Final Exam Group (Date and Time): Group 3: Friday 5/11/07 5-8pm



### Required Textbooks:

1. **“Behavior and Design of Steel Structures”**, by Abolhassan Astaneh-Asl, 2007 Edition. This is a textbook in its final stages of preparation for printing. The book (in PDF format), which covers CE122 syllabus, will be posted on the course web site at ([www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh)) for free download of students enrolled in CE122. The lectures will follow this document. Homework assignments are also in the document.
2. **“AISC Steel Construction Manual-2005”** This is the latest Steel Construction Manual released by the American Institute of Steel Construction (AISC) in 2006 and supersedes all other AISC Manuals. Students enrolled in steel design courses in U.S. can purchase this Manual for a student price of \$120. The faculty teaching the course sends the student payment to the AISC and receives the copy to be given to the student. More details will be provided in class.
3. **“Specification for Structural Steel Buildings-2005 and Commentary”** This is the most current Specification that governs design of steel structures. A copy of this document (in PDF) format can be freely down loaded from <http://www.aisc.org/> or form the CE122 course page at [www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh).
4. **“Seismic Provisions for Structural Steel Buildings-2005 and Commentary”** This is the most current Specification that governs *seismic* design of steel structures. A copy of this document (in PDF) format can be freely down loaded from:<http://www.aisc.org/> or from the CE122 course page at [www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh).

**Homework:**

Homework assignments are due at the beginning of the lecture on the due dates. Late homework solutions will not be accepted. However, in calculating your final course grade, one lowest homework grade will be dropped. Please use dark pencil and engineering pad paper, write neatly and use a ruler when drawing the sketches. Sloppy homework can result in loss of up to 30% of the HW grade. Solutions to the homework sets will be posted on the course web site at [www.ce.berkeley.edu/~astaneh](http://www.ce.berkeley.edu/~astaneh).

**Term Design Project:**

A term project is assigned at the beginning of the semester. You need to form a Design Team of 2 students to work on the Term Project throughout the semester. The project will be graded based on your work during the semester (about 40% of the project grade) and the quality of the Final Term Project Report submitted at the end of the semester (60%).

**Laboratory Sessions:**

All students should attend Lab Sessions (2-5 on Wednesdays). These sessions are an integral part of this course and are as important to attend as the lectures. If your schedule does not permit you to attend the Lab sessions, you should not take this course. During the lab sessions we will discuss loading according to the ASCE-7 Standard, conduct demonstration tests to show actual behavior of steel members and discuss and work on the Term Project. After first Hw is assigned, the GSI will use part of Lab Sessions to solve example problems on the current week's HW problem set, and answer your questions.

**Examinations:**

There will a midterm examination. If for justifiable health or other reasons you cannot take the mid-term exam, the grade for the missed exam will be assigned as the two-thirds of the grade on the final plus one-third of the grade on homework sets 1-5.

**Grading:**

Homework will count for 20%; Mid-Term exam for 25%; Term Project for 20% and the Final Exam for 35% of the final course grade.

UNIVERSITY OF CALIFORNIA – BERKELEY, Department of Civil and Environmental engineering  
**CE122- DESIGN OF STEEL STRUCTURES- Spring 2007**

Lecture	Date	Topic	Due Date for HW
1.	W Jan 17	Ch. 1- Introduction	
Lab	W Jan 17	Ch. 1-Design Procedures- Types of Steel Structures	
2	M Jan 22	Ch. 2 – Material	
3	W Jan 24	Ch. 3- Material	
Lab	W Jan 24	Ch.3- Loads	
4	M Jan 29	Ch.4- Tension Members,	
5	W Jan 31	Ch.4- Tension Members	<b>HW1 is due (1:10PM)</b>
Lab	W Jan 31	Tension Member Demonstration Tests in 502D, Term Project, Problem Solving	
6	M Feb 5	Ch. 5- Compression Members	
7	W Feb 7	Ch. 5- Compression Members	<b>HW2 is due (1:10PM)</b>
Lab	W Feb 7	Term Project, Problem solving	
8	M Feb 12	Ch. 5-Compression members	
9	W Feb 14	Ch. 5-Compression members	<b>HW3 is due (1:10PM)</b>
Lab	W Feb 14	Compression Member Demo. Tests, Term Project, Problem Solving	
-	M Feb 19	<b>Presidents' Day- Academic Holiday, No Classes</b>	
10	W Feb 21	Ch. 6- Flexural Members	<b>HW4 is due (1:10PM)</b>
11	W Feb 21	Term Project, Problem solving	
12	M Feb 26	Ch. 6-Flexural Members	
13	W Feb 28	Ch. 7- Members Subjected to Shear	<b>HW5 is due (1:10PM)</b>
Lab	W Feb 28	Flexural Members Demo. Tests, 200 Davis, Term Project, Problem Solving	
14	M Mar 5	Ch. 8- Beam-Columns	
15	W Mar 7	Ch. 8- Beam-Columns	<b>HW6 is due(1:10PM)</b>
Lab	W Mar 7	Term Project, Problem Solving	
16	M Mar 12	Ch. 9-Connections	
17	W Mar 14	Ch. 8-Welds	<b>HW7 is due (1:10PM)</b>
Lab	W Mar 14	Beam-Column Demonstration Tests, Term Project, Problem Solving	
18	M Mar 19	Ch. 8-Welded Connections	
19	W Mar 21	Ch. 8-Welded Connections	
Lab	W Mar 21	Problem Solving, <b>Midterm Exam (110 minutes) covers Chapters 1-7, HWs 1-7</b>	
-	M Mar 26	<b>Spring Recess –No classes</b>	
-	W Mar 28	<b>Spring Recess- No classes</b>	
20	M Apr 2	Ch. 9- Bolted Connections	
21	W Apr 4	Ch. 9 – Bolted Connections	<b>HW8 is due (1:10PM)</b>
Lab	W Apr 4	Demonstration of Welding and Bolting, Term Project, Problem Solving	
22	M Apr 9	Ch. 10 Eccentrically Loaded Connections	
23	W Apr 11	Ch. 10 Eccentrically Loaded Connections	<b>HW9 is due (1:10PM)</b>
Lab	W Apr 11	Term Project, Problem Solving	
24	M Apr 16	Ch. 11 Shear Connections	
25	W Apr 18	Ch. 11 Shear Connections	<b>HW10 is due (1:10PM)</b>
Lab	W Apr 18	Term Project, Problem Solving	
26	M Apr 23	Ch. 12 Moment Connections	
27	W Apr 25	Ch. 12 Moment Connections	<b>HW11 is due (1:10PM)</b>
Lab	W Apr 25	Last Discussion Session on Term project	
28	M Apr 30	Ch. 13 Introduction to Composite Structures	
29	W May 2	Ch. 14 Introduction to Composite Structures	<b>Term Project is due (1:10PM)</b>
Lab	W May 2	Review Session for the course	
30	M May7	Review, discussion of the final exam and course evaluation	

**Final Exam: Group 3, Friday 5/11/07 5-8pm (covers Chapters 1-11, HWs 1-11)**

Location of the final exam will be announced by the University during the last week of the semester