Instructor: Arash E. Zaghi, PhD, PE  
Castleman Building (CAST), Room 328

Class Hours: 
Lectures: MWF 2:00 – 2:50 PM  
CAST 212

Design Laboratory:  
TH 8:00AM-10:00AM (Section 1)  
CAST117  
TH 11:00AM-1:00PM (Section 2)  
CAST117  
TH 3:30PM-5:30PM (Section 3)  
CAST117

Teaching Assistant: TBD.

Office Hours: TBD.

Email: Please use HuskyCT email for all the course related communications

Required Texts: 
Text Book:  

Design Manual:  

Prerequisites: CE 3110 Mechanics of Materials

Attendance: Students are expected to attend all the lectures and laboratory sessions. There will be no makeup quizzes or exams. Only works missed by absence resulting from co-curricular activities performed in the interest of the university and/or those that support the scholarly development of the student or documented medical emergency will be accommodated. Students involved in such activities should inform me in writing prior to the anticipated absence and take the initiative to make up the missed work in a timely fashion.

Goals: The purpose of this course is to provide the students with a solid background in the fundamentals of structural steel design. In this course, the student will be thought about the basics of structural loadings, load combinations, load paths, how to design structural steel systems, and how to use the current design specification. The course will also introduce the student to design aids that are commonly used by practicing structural engineers.

Outcomes: Upon successful completion of this course, the student will be able to use the current design specification, to size basic steel elements and connections needed to assemble typical structures for the assumed loading condition, to utilize design aids and software, to prepare and present the design documents in a way typical of design offices.
Laboratory Session
All students should attend Lab Sessions. These sessions are an integral part of this course and are as important to attend as the lectures. During the lab sessions we will discuss a full design project using a very powerful analysis and design software.

Tentative Grading Distribution

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>15%</td>
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<tr>
<td>Announced Quizzes (2-4)</td>
<td>10%</td>
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<tr>
<td>Laboratory Group Work and Design Project</td>
<td>15%</td>
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<tr>
<td>Midterm exam (one)</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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Quizzes
Two to four announced quizzes will be given during either the lecture time or the laboratory sessions.

Midterm Exam
There will be one midterm exams during the lecture time on Wednesday, March 28. The content of the exam will be announced in advance.

Final Exam
The final exam will be held on Monday, April 30, 3:30PM-5:30PM. The final exam covers the entire content of the course.

Homework
Problems assigned on Monday will be due on Friday the same week at the start of class. Problems assigned on Wednesday and/or Friday will be due on next Monday at the start of class. Late problems will not be accepted. Soon after problems are due, solutions will be posted on HuskyCT. Presentation, format and neatness count in grading your homework.

Cell Phones
Cell phones are not permitted to be used in class from the time it begins until it finishes. Laptops can ONLY be used to take notes. Please be advised that texting and using laptops for other reasons will distract me and the other students; therefore violators will be asked to leave the classroom.

Course Content

1- Introduction
2- Steel Material and Structural Shapes
3- Design Philosophies and Limit States for Steel Structures
4- Loads and Load Factors

(Continued on the next page)
5- Design of Members Subjected to Tensile Forces
   a. Effective Area
   b. Block Shear

6- Design of Members Subjected to Compressive Forces
   a. Buckling
   b. Effective Length

7- Design of Members Subjected to Bending Moments
   a. Laterally Supported Beams
   b. Lateral Torsional Buckling
   c. Non-Compact Beams

8- Design of Members Subjected to Combined Effects of Axial Forces and Bending Moments
   a. Interaction Principals
   b. Braced and Moment Frames
   c. Selection of Section

9- Connections
   a. Simple Shear Connections
   b. Light Bracing Connection