Department of Civil and Environmental Engineering  
Colorado State University  
CIVE 466 - Design and Behavior of Steel Structures  
Fall 2015

Instructor: Dr. Hussam Mahmoud  
Office: A205A Engineering Building  
Phone: (970) 491-6605  
E-Mail: Hussam.Mahmoud@colostate.edu  
Office Hours: Fri, 9:00 a.m. – 11:00 a.m. @ A205A

Grader: Mehrdad Memari (Ph.D. student)  
Office Hours: Mon and Wed, 4:00 p.m. – 5:00 p.m. @ Internet Cafe Meeting Room

Class Hours: MWF, 12:00 – 12:50 p.m.  
Room: Engineering, E 120  
Textbook: American Institute of Steel Construction, *Steel Construction Manual*, 14th Edition, AISC 2011. We will discuss and apply the AISC design procedures throughout the class. Therefore, you are required to bring the manual to every class. The procedure for purchasing the manual at a discounted student rate will be explained in class.

Prerequisites: CIVE 367


Homework: Homework problems will be assigned regularly and will be due one week after being assigned, unless stated otherwise, at the beginning of class. Late HWs will not be accepted. You are encouraged to discuss the problems with your colleagues. However you must provide your own solution. It is very important that you submit neat and well organized HW. Points will be deducted for sloppy work. Solutions are to be developed using a pencil and a ruler and presented on an engineering papers (points will be deducted if this is not followed).

Term Exams: Two midterm exams during the semester. Only an FE exam approved calculator is allowed during the tests. You will use your own steel manual during tests. No writing is allowed in the manual. Your own front and
back 8.5 x 11 cheat sheet is allowed (should only include equations but NOT examples and/or definitions).

**Project:**

The project will consist of conducting a case study on failure of a steel structure. The class will be divided into groups. Each group is expected to submit a report summarizing their findings. The report will be graded on the technical content and on the proper writing and grammar. You will need to submit your report as a printed document and also email a Microsoft Word version to Dr. Mahmoud. More details on the project will be provided in class at the appropriate time.

**Class Participation:**

Your class participation points will be deducted if:

- You use your cell phone or you cell phone rings during class
- You hold any private conversations once class starts
- You conduct any disrespectful behavior during class

Students who lost their participation points will be asked to leave the class and will be referred to the Office of Conflict Resolution and Student Conduct Services.

**Final Exam:**

A comprehensive exam, December 16, 7:30 – 9:30 a.m. The same rules for term exams apply.

**Grading:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Term Exams</td>
<td>40% (2@20% each)</td>
</tr>
<tr>
<td>Project</td>
<td>5%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Grading Scale:**

Term grades for this course will use the traditional grading system:

A 90 – 100%  B 80 – 89%  C 70 – 79%  D 60 – 69%  F below 60%

(grades will include pluses and minuses. For example, low 80’s will be B-)

**Scholastic Conduct:**

The course will adhere to the academic integrity Policy of Colorado State University General Catalog (Page 7) and the student Conduct Code. CSU and college of engineering polices on academic integrity can be found on the web at:

http://catalog.colostate.edu/Content/files/2012/FrontPDF/1.6POLICIES.pdf

These polices will be strictly enforced. Any violation to the policies will result in dismissal from the course with grade “F” and possible dismissal from the university.

The following Honor Pledge should be hand written and signed on all of your academic work in this class including HW, Exams, and Term Project:
List of Topics: The course will include the following topics:
1. Background on Structural Steel and Design Philosophies
2. Loads and Load Combinations
3. Tension Members
4. Compression Members
5. Flexural Members
6. Members with combined Axial and Flexural Loads (beam-columns)
7. Connections (bolted and welded)

Class Objectives: Enable students to:
1. Understand the mechanical behavior of steel as a construction material
2. Evaluate the physical behavior and response of various structural components
3. Comprehend the relationship between experimental tests and code equations
4. Apply the design procedure for the structural components using the design specifications
5. Check the adequacy of a given member, connection, or structural system.