CNET 4620 Advanced Design of Cold-Formed Steel Structures
Instructor: Cheng Yu
Classroom: NTDP F187
Office Hours: (Tu) 4:00-5:00pm,
Phone: 940-891-6891
Spring 2013
Time: (Tu 9:30am – 11:20am, Th 9:30am – 12:20 pm)
Office: NTDP F115X
Phone: 940-891-6891
Email: cheng.yu@unt.edu

Course Description:
Advanced Design in Cold-Formed Steel Structures. 3 hours (2;3). A study of the theories of design and behavior of cold-formed / light gauge steel structural members, connections, and systems. Relevant design specifications and computer applications are included.

Course Objectives
By the end of the course, you be able to:

1. Understand the behavior of cold-formed steel members
2. Determine design strength of cold-formed steel members
3. Calculate design strength of typical cold-formed steel connections
4. Design cold-formed steel stud framed shear walls

Course Requirements: Attendance – Attendance is mandatory.

Required text: "North American Specification for the Design of Cold-Formed Steel Structural Members, AISI S100-2007 with Supplement 2", AISI S100-07 w/S2-10, American Iron and Steel Institute.

Exams: There will be TWO exams (this includes the final exam). Exams will be based on text readings, handouts, lab exercises, class lectures and discussions. Students are responsible for all text material, regardless of whether we review the text material in class or not.

Missed Exams: You will be allowed to make up a missed exam only if you have a documented university excused absence. If you know in advance that you will miss an exam, you MUST contact the instructor before the scheduled exam. Make-up exams may not contain the same questions and may contain only essay and short answer questions.

Assignments: In addition to the readings from the text, there will be writing assignments and in-class quizzes. No late assignments will be accepted.

Final Project: The students will be required to finish a final project at the end of this semester. The deliverables of the final project include a writing report and an in-class presentation.

Extra credit: Extra credit will be given to the students according to their final projects’ quality.

Grades Components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Lab Assignment</td>
<td>25%</td>
</tr>
<tr>
<td>In-class Quiz</td>
<td>5%</td>
</tr>
<tr>
<td>Final Project</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>15%</td>
</tr>
<tr>
<td>Bonus</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>105%</td>
</tr>
</tbody>
</table>
Grade Distribution

A  90-105%
B  80-89.99%
C  70-79.99%
D  60-69.99%
F  0-59.99%

Disabilities Accommodation:
The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.

Additional Policies and Procedures:
Tardiness: If you arrive late, please enter quietly and sit down. Do not walk in front of speakers or disrupt the class in any other way.

Cell Phones: Please remember to turn off phones prior to class.

Extra Help: PLEASE DO NOT WAIT UNTIL THE LAST MINUTE. If you are having trouble with this class, please come by my office during office hours. I am also available by email at cheng.yu@unt.edu.

Lecture Outline

<table>
<thead>
<tr>
<th>This Class meets Tuesday</th>
<th>Lecture Topic</th>
<th>BOOK CHAPTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Meeting 1</td>
<td>Introduction</td>
<td>A</td>
</tr>
<tr>
<td>Class Meeting 2</td>
<td>Plate Buckling and Design Criteria</td>
<td>B</td>
</tr>
<tr>
<td>Class Meeting 3</td>
<td>Flexural Members</td>
<td>C</td>
</tr>
<tr>
<td>Class Meeting 4</td>
<td>Flexural Members</td>
<td>C</td>
</tr>
<tr>
<td>Class Meeting 5</td>
<td>Web Crippling</td>
<td>C</td>
</tr>
<tr>
<td>Class Meeting 6</td>
<td>Compression Members</td>
<td>C</td>
</tr>
<tr>
<td>Class Meeting 7</td>
<td>Compression Members</td>
<td>C</td>
</tr>
<tr>
<td>Class Meeting 8</td>
<td>Midterm Exam</td>
<td></td>
</tr>
<tr>
<td>Class Meeting 9</td>
<td>Connections</td>
<td>E</td>
</tr>
<tr>
<td>Class Meeting 10</td>
<td>Connections</td>
<td>E</td>
</tr>
<tr>
<td>Class Meeting 11</td>
<td>Shear Walls</td>
<td>F</td>
</tr>
<tr>
<td>Class Meeting 12</td>
<td>Shear Walls</td>
<td>Handout.</td>
</tr>
<tr>
<td>Class Meeting 13</td>
<td>Cold-Formed Steel Framing</td>
<td>Handout</td>
</tr>
<tr>
<td>Class Meeting 14</td>
<td>Final Review</td>
<td></td>
</tr>
<tr>
<td>Class Meeting 15</td>
<td>Final Exam</td>
<td></td>
</tr>
<tr>
<td>Class Meeting</td>
<td>Lab Assignment</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lab 1 Material Properties and Coupon Test</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Lab 2 Elastic Thin-Plate Buckling</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lab 3 Elastic Buckling of Cold-Formed Steel Flexural Members</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Lab 4 Elastic Buckling of Cold-Formed Steel Compression Members</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Lab 5a Web Crippling Test</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Lab 5b Web Crippling Analysis</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Lab 6 Compression Test and Analysis</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Lab 7 Connection Test</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Lab 8 Nominal Strength and Design Factors</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Final Project 2012 CFS Student Competition</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Lab 9a Design of CFS Framed Building</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Lab 9b Design of CFS Framed Building</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Final Project</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Final Project Presentation</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Final Exam</td>
<td></td>
</tr>
</tbody>
</table>