



**CE 3110-001 Mechanics of Materials**  
**Department of Civil and Environmental Engineering**  
**School of Engineering**  
**University of Connecticut**

**Spring Semester 2010**

**Course Description (from undergraduate catalog):**

Simple and combined stress, torsion, flexure and deflection of beams, continuous and restrained beams, combined axial and bending loads, columns.

**Required Text:** *Mechanics of Materials* by F.P. Beer, E.R. Johnston, J.T. DeWolf, and D.F. Mazurek, 5th Edition, McGraw-Hill, 2009.

**Instructor:** Jaehun Ahn, [jahn@engr.uconn.edu](mailto:jahn@engr.uconn.edu), CAST 202

**TAs:** Rahul Dantulwar, [rad08003@engr.uconn.edu](mailto:rad08003@engr.uconn.edu)  
Binu Shrestha, [binu.shrestha@engr.uconn.edu](mailto:binu.shrestha@engr.uconn.edu)

**Lectures:** Monday, Wednesday, Friday, 11:00 – 11:50 am, CAST 212

**Office Hours:** TA (Binu): Tuesday, Thursday, 9:00 – 11:00 am, CAST 301  
TA (Rahul): Tuesday, Thursday, 1:00 – 3:00 pm, CAST 301

**Course Requirements:**

- Attendance: Attendance will be checked. 10% of final course grade.
- Homework: Homework is graded based on completeness. Late homework will not be accepted. Homework should meet the following requirements to be graded. 10% of final course grade.
  - Use only one side of the letter size (8.5''×11'') paper. Use the pencil. Write the course number/section, your name, the assignment/problem number. Begin each problem on a new page. Staple!
- Pop Quiz: Announced/unannounced pop quizzes will be given over the semester. 5% of final course grade.
- Quiz: Two 50-minute quizzes will be given. 25% of final course grade for each quiz.
- Final exam: More information will be announced before the exam. 35% of final course grade.

**Grading:** Total score is 110 out of 100.

Homework	10%
Attendance	10%
Pop Quizzes	5%
Quiz 1	25%
Quiz 2	25%
Final Exam	35%

## Course Schedule: Updated on 2/12

Dates	Class No.	Sections	Topics	Homework Problem and Due
1/20	1	1.1-10	Stresses Under Axial Load	
1/22	2	1.11-13	Components of Stress + Factor of Safety	No 1 1.1,9,16
1/25	3	2.1-8	Stress-Strain Diagram	No 2 1.30,35,38
1/27	4	2.9-10	Statically Indeterminate Problems	No 3 2.3,17,25
1/29	5	2.11-15	Generalized Hooke's Law	No 4 2.35,45,51
2/1	6		Review and <b>Pop Quiz</b>	No 5 2.64,70,79
2/3	7	2.17-20	Stress Concentrations + Plastic Behavior	
2/5	8	3.1-4	Stresses in Torsion	No 6 2.95,101,113
2/8	9	3.5-6	Angle of Twist + Statically Indeterminate Shafts	No 7 3.8,11,21
2/10			<b>Class canceled due to inclement weather</b>	
2/12	10	3.7-8	Transmission Shafts + Stress Concentrations	No 8 3.36,38,51
2/15	11	4.1-5	Stresses and Deformations in the Elastic Range	No 9 3.69,77,87
2/17	12	4.6-7	Members Made of Several Materials	No 10 4.3,9,24
2/19	13		<b>Engineering Week Lecture by Scott Case</b> (Founder of 'Priceline.com') Time: 11am, Location: ITE C80	
2/22	14	4.12	Eccentric Axial Load (Make-up Class)	No 11 4.33,37,47
2/24	16		<b>Quiz 1</b>	
2/26	17	4.13-14	Unsymmetric Bending	No 12 4.102,103,122
3/1	18	5.1-3	Shear and Bending Moment Diagrams	No 13 4.131,134,142
3/3	19	5.4	Design of Prismatic Beams	No 14 5.2,27,28
3/5	20	6.1-5	Shearing Stresses in a Beam	No 15 5.43,45,56
			<b>Spring Recess</b>	
3/15	21		Review and <b>Pop Quiz</b>	No 16 6.1,7,21
3/17	22	6.6-7	Shearing Stresses in Thin-walled Members	
3/19	23	7.1-3	Transformation of Plane Stress	No 17 6.32,35,36
3/22	24	7.4	Mohr's Circle	No 18 7.5,9,20
3/24	25	7.5-6	3-D Stress	No 19 7.31,53,60
3/26	26	7.9	Pressure Vessels	No 20 7.66,75,78
3/29	27	8.1-3	Principal Stresses in Beams + Design of Shafts	No 21 7.100,112,124
3/31	28		Review for Quiz 2 (or Make-up Class)	No 22 8.1,3,19
4/2	29		<b>Quiz 2</b>	
4/5	30	8.4	Combined Loadings	
4/7	31	9.1-4	Deflections of Beams by Integration	No 23 8.32,40,49
4/9	32	9.5	Indeterminate Beams	No 24 9.1,3,6
4/12	33	9.7-8	Method of Superposition	No 25 9.19,20,25
4/14	34	9.9-11	Moment-Area Method	No 26 9.66,77,82
4/16	35	9.12-13	Unsymmetric Loadings	No 27 9.100,105,111
4/19	36	9.14	Indeterminate Beams	No 28 9.126,129,131
4/21	37	10.1-4	Euler's Column Formula	No 29 9.147,150,152
4/23	38	11.1-5	Elastic Strain Energy	No 30 10.5,12,20
4/26	39	11.7-10	Impact Loadings; Deflections	No 31 11.11,29,34
4/28	40	11.11-13	Castigliano's Theorem	No 32 11.42,50,68
4/30	41		Review for Final (or Make-up Class)	No 33 11.83,94,96
TBA			<b>Final Exam</b>	

\*\* As things tend to get hectic during the semester, the actual schedule may change.