



## CONE 331 Mechanics of Materials (Spring 2015)

: Applications of conservation principles and stress/deformation relationships for continuous media to structural members; axially loaded members; thin-walled pressure vessels; torsional and flexural members; shear; moment; deflection of members; combined loadings; stability of columns; nonsymmetrical bending, shear center; indeterminate members; elastic foundations.

*Prerequisite : CONE 211 and CONE 221*

**Instructor:** Ilseok “Eddie” Oh, Ph.D.  
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**Office Hour:** (T & R) 9:00am – Noon

**Lecture/Lab:** (M & W) 11:00am – 12:40pm, AGIT 118A

**Required Text:** Mechanics of Materials, 8<sup>th</sup> Ed, Russell C. Hibbeler, Prentice Hall  
 ISBN-10: 0136022308, ISBN-13: 978-0136022305

### **Learning Outcomes:**

Upon satisfactory completion of the course, the student will be able to:

1. Calculate stress, strain, and deformation of materials subjected to axial, torsional, bending, and transverse loading.
2. Utilize the stress-strain diagrams for determining the mechanical properties of various materials.
3. Utilize stress transformation equations and Mohr’s circle to determine the principal stresses and the max shear stress.
4. Analyze beams and columns, and determine shear, bending, deflection, and buckling load.
5. Perform standard lab testing procedures and prepare written reports.

### **Course Policies:**

- Course Requirements and Grades

Attendance & Participation	10%	Assignments & Quizzes	30%
Exam I	20%	Exam II	20%
Exam III	20%		

- Grading

A	B	C	D	F
100 - 90	89 - 80	79 - 70	69 - 60	59 – 0

- Class Attendance Requirements (*two lateness = one absence*)

# of Absence	0 - 3	4	5
Point Deduction	0	- 5	- 10

- All assignments should be submitted at the beginning of the class and the due date is “next” class meeting time. Only selected HWs will be graded. Unless prior arrangements are worked out with the instructor, a penalty of 50% will be assessed on late assignments submitted within next class meeting time of the due date. After the grace period, ZERO credit towards a final grade.

### **Academic Dishonesty**

: Texas A&M University-Commerce will not condone plagiarism in any form. Plagiarism represents disregard for academic standards and is strictly against University policy. Plagiarized work can result in a “0” on a given assignment(s) or an “F” for the course as well as further administrative sanctions permitted under University policy. You may discuss course work and other course materials with fellow students (except during tests), but it is inappropriate to have another student do your course work or provide you with any portion of it. Guidelines for properly quoting someone else’s writings and the proper citing of sources can be found in the APA Publication Manual. If you do not understand the term “plagiarism”, or if you have difficulty summarizing or documenting sources, contact your professor for assistance.

### **Students with Disabilities**

: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. 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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services  
Gee Library Room 132, Texas A&M University-Commerce  
Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148  
StudentDisabilityServices@tamuc.edu

### **Student Conduct**

: All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*). Students are expected to attend all class periods and to be prepared for each class. Students are expected to refrain from any disruptive behaviors during class, which includes but is not limited to working on assignments/projects from another course, reading non-course materials, or using the computer for non-class purposes. Cell phones, iPods, and other electronic devices should be turned off during class.

**A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.**

**Class Topics & Schedule:**

<b>Week #</b>	<b>Week of</b>	<b>M</b>	<b>W</b>
1	19-Jan		Stress
2	26-Jan	Stress	Stress
3	02-Feb	Strain	Strain
4	09-Feb	Mechanical Properties of Materials	Mechanical Properties of Materials
5	16-Feb	Axial Load	Axial Load
6	23-Feb	Torsion	Engineer's Day
7	02-Mar	Torsion	Exam I
8	09-Mar	Bending	Bending
9	16-Mar	Spring Break	
10	23-Mar	Bending	Bending
11	30-Mar	Transverse Shear	Transverse Shear
12	06-Apr	Transverse Shear	Combined Loading
13	13-Apr	Stress Transformation	Strain Transformation
14	20-Apr	Design of Beams & Shafts	Deflection of Beams & Shafts
15	27-Apr	Deflection of Beams & Shafts	Buckling of Columns
16	04-May	Energy Methods	Exam II
17	11-May	Finals Week	