ConE 331 Mechanics of Materials (Spring 2013)

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

Instructor: Ilseok “Eddie” Oh, Ph.D.
Associate Professor, Construction Engineering
AGIT-209, Eddie.Oh@tamuc.edu, (903) 886 – 5468

Office Hour: (M & W) 9:00am – 11:00am  (T & R) 9:15am – 10:00am

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


Course website: www.ioh.pageout.net

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  20%
  - Exam I  20%
  - Exam II  20%
  - Exam III  30%

- Grading

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

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- 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.

- ADA Statement: 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 the Office of Student Disability Resources and Services (Gee Library 132, 903-886-5150, 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.

**Class Topics:**

- Stress/Strain (2)
- Mechanical Properties of Materials (2)
- Axial Load (2)
- Torsion (2)
- Bending (3)
- Transverse Shear (2)
- Combined Loadings (2)
- Stress/Strain Transformation (2)
- Design of Beams and Shafts (2)
- Deflection of Beams and Shafts (3)
- Buckling of Columns (2)
- Energy Methods (2)