MECH 5302: Solid Mechanics I

Textbook (Optional):   **Elasticity and Inelastic Stress Analysis**
                            by H. Shames and F. Cozzarelli

Class/Lab Meeting: TRs, 1:30 pm to 2:50 pm

Class Room: UGLC 342

Prerequisite: Mechanicals of Materials

Instructor: Yirong Lin, Ph.D.
                            Department of Mechanical Engineering
                            Office: A111
                            E-mail: ylin3@utep.edu
                            Office Hours: 3:30 pm to 4:30 pm TRs

Topics covered
1. Introduction to Cartesian Tensors
2. Stress
3. Strain
4. Behavior of Engineering Materials
5. Linear Elastic Behavior
6. Plasticity and Visco-plasticity
7. Constrictive Equations
8. Energy Based Method

Grades
Your grade for this course will be assessed based on your performance in quizzes (10 %), mid-term exams (50 %), project (20 %), and term paper (20 %). Four quizzes will be given throughout the semester. The content of a quiz could be the materials covered in previous sessions. There will be no make-up quizzes. Four exams will be given during the semester. Make-up exams will be given only for extremely credible reasons (no flat tire, no sudden sick or family member pass away). Otherwise, your final grade is calculated based on the criteria below,

    Your final grade will be calculated based on the points you have accumulated as follows:
    A   ≥90
    B   ≥80 but <90
    C   ≥70 but <80
    D   ≥60 but <70
    F   <60

   The instructor reserves the right to revise this grading plan. However, students will be informed of any changes during the semester.

Allowed Calculators

The following will be the only calculators allowed in exams:
- Casio: All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
- Hewlett Packard: The HP 33s and HP 35s models, but no others.
- Texas Instruments: All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

These are the same calculators that are currently being allowed in the Fundamental of Engineering (FE) and Professional Engineering (PE) exams (http://www.ncees.org/exams/calculators/).   It is your responsibility to get acquainted with the features of the calculator you decide to use. I recommend that you use this calculator for all your work (including other courses) since this will help you learn how to use all the features of your calculator.

Study Guide
Read the text to be discussed prior to the scheduled class and review the subject thoroughly after the class. Read the textbook carefully. Work on all examples given in the text and solve as many unassigned problems as you can. Expect to spend 10 to 15 after-class hours each week on the subject. Establish a good studying habit and you will do very well in the class.

Policy on Cheating
Students are expected to be above reproach in all-scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents= Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university; policies on scholastic dishonesty will be strictly enforced.

Class Schedule

Quiz: Week 2 (09/06/12), Week 6 (10/04/12), Week 10 (11/1/12), Week 12 (11/15/12)
Exam: Week 3 (09/13/12), Week 7 (10/11/12), Week 11 (11/8/12), Week 14 (11/29/12)

Project Due: 11/29/12
Term Paper Due: Week 15, 12/06/12.

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.