Instructor
Prof. Bill Dunbar, E2 325, xt. 9-1031, dunbar@soe.ucsc.edu
Location/Time: Soc Sci 2 137, T H 2-3:45 PM
Office hours: T 12-2:00 PM

URLs
- Course web site: Go here https://ecommons.ucsc.edu/xsl-portal, then click “Search Public Sites” to find CMPE 115 2012.
- We will make extensive use of Forums that you will ONLY be able to access and add to IF you get a Cruz ID Gold account / password. Instructions for doing so can be found through the ecommons web page.
- We will make extensive use of McGraw Hill Connect, http://connect.mcgraw-hill.com/. When you purchase the book in the bookstore, you also purchase Connect Plus, which allows you to look at the book online. Connect is used to do and submit homeworks and exams.

Course Description
Introductory course on solid mechanics of materials. Topics covered include: stress and strain, torsion, bending of beams, shearing stresses in beams, compound stresses, principal stresses, deflections of beams, statically indeterminate members, columns. This course is recommended for students in the robotics concentration of Computer Engineering.

Prerequisites
CMPE 9; Math 19B; AMS 10 or Math 21. From CMPE 9, it is expected that students have an understanding of Statics.

Grading
Homework: 50%, Quizzes (two): 20%, Midterm: 10%, Final: 20%.

Homework Policy
Homework problems are available via Connect about 1 week before they are due. You work out your own problems, and submit only your answer online. Collaborations on working out the problems are encouraged, though no student has precisely the same
problem as the other students. The methods will be the same, so working together is helpful, but the answers will be different to ensure each student works out the details on their own. There are 9 homework assignments, each due by 5PM on Tuesdays.

Text and Materials
The textbook is “Mechanics of Materials Beer, 6th ed.”, by Beer, Johnson, DeWolf and Mazurek, McGraw Hill. All materials for the course are available online via Connect, and a hardcopy of the book is available in the bookstore.

Exams
In class quizzes, midterm and final exam will be given. These will be done online, so you’ll need a laptop in class. If you do not have a laptop, we can make arrangements for you.

Course Outline by Week
The tentative schedule of reading and lecture topics per week (by book chapter) are as follows:

W1 Introduction - Concept of Stress
W2 Stress and Strain - Axial Loading
W3 Torsion
W4 Pure bending
W5 Analysis and design of beams for bending
W6 Shearing stressed in beams and thin-walled members
W7 Transformations of stress and strain
W8 Principal stressed under a given loading
W9 Deflection of beams
W10 Columns

As we proceed, I will tell you which sections in these chapters are required reading.