Syllabus for Engr225 Spring 2016
Mechanics of Materials

Instructor
Dr. Rainer Heller  Office: SAM210  Office Hours: see website
Email: rainer.heller@seattlecolleges.edu  Website: www.seattlecentral.edu/faculty/rheller

Text

Tools
A scientific calculator will be required. Flash drives, colored pencils, a protractor, a ruler, and graph paper will be helpful.

Meeting Times
Daily 11-11:50am, SAM206

Content
This course is an introduction to the concepts of stress, deformation and strain in solid materials. Basic relationships between loads, stresses, and deflections of structural and machine elements such as rods, shafts and beams are developed. The load-carrying capacity of these elements under tension, compression, torsion, bending and shear forces are considered.

Course Format
There will be daily lectures. Your active participation is essential in making the class a success. Read the material before class and come equipped with questions.

Course-level Learning Outcomes
After successful completion of this course, students will be able to do the following:
1. Describe the concepts of normal and shear stress and strain and interpret stress-strain diagrams.
2. Solve problems involving the mechanical properties of materials that are subject to various types of loadings (axial load, torsion, bending, transverse shear, combined loadings), and calculate resulting stresses and strains and material deformation.
3. Compute the stress and strain states both analytically and graphically at various orientation angles.
4. Compute the principal normal and maximum shear stresses.
5. Draw the shear force and bending moment diagrams and determine the maximum shear and maximum bending moment for various types of beam loadings.
6. Compute the deflection of beams under various loadings.

Assessment
Exams: 80%
Homework: 10%
Project: 10%

Note: This syllabus is subject to change. Please check online for the most recent version. I usually include your feedback on office hours etc.
Exams
There will be about 5 (maybe 6) one-hour exams. I may not grade all of the exams. I may only grade parts of an exam. This is unlikely but possible. The lowest score will be dropped. The exams will all count equally (no 'special' final exam). There won't be any makeup exams. The dates posted are tentative but exams will typically be held on Fridays.

Homework
Homework will be due once a week. The problem sets will be available on the class web site. Solutions will be posted on the web site as well. The lowest homework score will be dropped. Your homework must be turned in on time. Late homework will have a deduction of 20%/day.
I strongly recommend you work on your homework with others to discuss any problems you encounter.

Project
As part of your term project you will (a) photograph examples of ‘MOM in action’, and (b) share your findings in a short presentation at the end of the quarter. Details will be posted on the web site and announced in class.

Special Assistance
Students with documented disabilities who need course accommodations, have emergency medical information, or require special arrangements for building evacuation should contact the instructor within the first two weeks of class. http://seattlecentral.edu/~crc/Course/policy_ada.htm

How to Succeed in Engr225
1. Attend class every day. If you miss class find out from your fellow students what you may have missed. Do not assume that the schedule will not change.
2. Read the text before you come to class. I cannot stress this point enough. In class we will either go through the examples in the book or cover end-of-chapter problems.
3. Do your homework regularly and as soon as possible. You must practice daily in order to allow your mind time to absorb and organize the material we are studying.
4. Practice, practice, practice! On exam day it will not be enough to do a problem, you will have to do it cleanly and efficiently, in 50 minutes.
5. Collaborate but don’t hide behind others. While working and studying in groups is strongly encouraged, make sure to spend time on your own organizing your work and making sure you really get the material.
6. Ask for help as soon as you need it. Do not wait until you are really behind or confused. Feel free to drop by during office hours or email me with your questions.
7. Utilize the tutoring center. Help is available but it is your responsibility to seek it.
8. If you have a personal/family emergency that is affecting your ability to work in or attend the class be sure to contact me as soon as possible so that we can discuss appropriate accommodations to help you to succeed in the class.

And let’s not forget ... ... to have fun 😊

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