Mechanics of Deformable Bodies

Last Updated: Tue, 07/08/2025

Course prefix: COE

Course number: 3001

Section: I

CRN (you may add up to five):
25520

Instructor First Name: Laurence

Instructor Last Name: Jacobs

Semester: Spring

Academic year: 2025

Course description:

Stress and strain analysis applied to beams, vessels, pipes, and combined loading; stress and strain transformations; beam deflection; column buckling.

Course learning outcomes:

1. Develop an ability to visualize and understand the fundamental behavior of structures and solids
2. Develop an understanding of assumptions and idealizations commonly used for analysis of structures and solids
3. Learn methods of computing stresses in several types of structural and machine components
4. Learn the fundamental approach for determining internal forces and stresses in indeterminate structures: use of equations of equilibrium, force-temperature-deformation relations, and expressions for the geometry of the deformations
5. Develop a basic knowledge of approaches to design of structural and machine components

Required course materials:

Mechanics of Materials, 9^{th} Edition, James M. Gere and Barry J. Goodno, Cengage

Grading policy:

Percentage for grade calculations: Quiz (single problem review of statics): 5%;

Three Tests 20%, 20%, 20%; Final Exam 30%; Homework 5%.

Grade Assignment (at a minimum): A>90; B>80; C>70; D>60

Attendance policy:

You have registered for an 8am class. This will be an active classroom, where you will be expected to participate. I have noticed a drastic difference in the exam performance between students who regularly attend class and those who don’t. Therefore, I will count attendance in determining your final grade.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

Core IMPACTS statement(s) (if applicable):

N.A.