Instructor: Ryan K. Roeder, Associate Professor  
148 Multidisciplinary Research Building, 1-7003  
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Teaching Assistants: Tyler Curtis, 225 MRB, tcurtis2@nd.edu

Lecture: TR 12:30-1:45 p.m., Hammes Mowbray 306

Office Hours: Weekly scheduled office hours TBA, otherwise an “open door” policy.


Prerequisites: AME 20241 Mechanics of Materials, CBE 30361 Science of Engineering Materials

Goals: The goal of this course is to provide a fundamental framework for understanding and manipulating the mechanical behavior of engineering materials. For all types of mechanical behavior covered, emphasis will be given to the (1) underlying physical mechanisms, (2) material structure-property relationships, and (3) theories, models, and their limitations. The course will cover content applicable to a diverse spectrum of career interests, enabling students to engineer materials for current and future generations of technology.

Grading:  
Midterm 25% Oct. 11 during the normal class period  
Final Exam 25% Take home  
Homework 25% handed out in class and posted on course website  
Project 25% due Nov. 22 in class, presentations TBA

Examinations: Exam format and content will be announced in class. The final exam will be comprehensive but biased toward the more recent material. Exams will be taken as scheduled, except in the case of illness or serious emergency. Contact the instructor before the exam to schedule a makeup exam.

Homework: Use of mathematical software packages (e.g. Matlab, Mathcad, etc.) is encouraged. Discussion of homework problems is also encouraged; however, each student is expected to submit his or her own, independent solution. Late homework will generally not be accepted except in the case of professional travel, illness or serious emergency. Contact the instructor before the due date to arrange an acceptable due date.

Project: The project will be a written critical review with an oral presentation.

Class Participation: In order to participate in class, one must be present and prepared. Lectures will involve discussion of reading or homework assignments.

Academic Honesty: Students should be familiar with the Academic Code of Honor (http://www.nd.edu/~hnrcode). Working together, asking questions of classmates, or assisting others on exams is prohibited.

Additions, amendments, or corrections to this syllabus may be made throughout the semester via in class announcements, handouts, or e-mail.