University of Notre Dame
Department of Aerospace and Mechanical Engineering

AME 60645 **Mechanical Behavior of Materials** **Fall 2016**

Instructor:	Ryan K. Roeder, Associate Professor 148 Multidisciplinary Research Building, 1-7003 rroeder@nd.edu, http://www.nd.edu/~rroeder
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.
Required Textbook:	K. Bowman, *Mechanical Behavior of Materials*, First Edition, John Wiley and Sons, Inc., 2004.
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.