

ME C85 / CE C30: Introduction to Solid Mechanics Course Syllabus – Fall 2016

Instructor: Ayyana M. Chakravartula, Ph.D., P.E., ayyanac@berkeley.edu
Office hours: T 4:00 PM – 5:00 PM, 6177 EH, or by appointment
GSIs: Matt Kury, mkury@berkeley.edu, OH F 11:00 AM – 12:00 PM, 1165 EH
Lecture: TTh 5:00 PM – 6:30 PM, 277 Cory
Discussion: T 9:00 AM, 3111 EH, W 2:00 PM, 1165 EH, F 10:00 AM, 1165 EH

Course materials will be posted on bCourses (<https://bcourses.berkeley.edu>).

Course Summary: This course is an introduction to the behavior of solid bodies.

Prerequisites: Math 53, Physics 7A, Math 54 (may be taken concurrently)

Required Textbooks: Hibbeler, Statics and Mechanics of Materials, 5th Ed, Pearson. ISBN 9780134382593

Required Materials: Engineering calculator (non-graphing). You may wish to consult the NCEES list (<http://ncees.org/exams/calculator/>).

Grading:		Important dates*:
Homework:	15%	Midterm 1: Thursday, October 6th, in class
Classwork:	5%	Midterm 2: Tuesday, November 15th, in class
Midterm Exam 1:	25%	Final: Thursday, December 15th, 11:30 AM – 2:30 PM
Midterm Exam 2:	25%	
Final Exam:	30%	* See information on acceptable absences on the following page

Policies:

Homework: Homework will be posted each Friday and due the following Friday at 1:00 PM. Late homework will not be accepted. The lowest homework score over the semester will be dropped. Solutions will be posted on the course website.

Exams: Exams are closed book, closed notes. Exams must be taken at the designated time; there will be no makeup exams except in the case of an unavoidable emergency or a university-mandated absence.* Arrangements must be made with the instructor prior to the exam.

Classwork: Throughout the semester, there will be opportunities for class participation. We expect everyone to participate fully. If a student misses a lecture where a participation activity occurred, the student can still earn the points by sending the professor an email with a real-life statics problem setup.

Collaboration: Students are encouraged to share intellectual views and discuss the course material freely. However, any graded work *must be the product of independent effort* unless otherwise noted. It is to the student's benefit to attempt all homework problems alone before working with others. High homework grades achieved by copying a process developed by another student will likely result in low exam grades.

Help is available! If you find that you are having difficulty with the material, come to office hours! Do not suffer alone. Your professor and GSI are here to help.

Lecture topics:

Topic	Suggested Reading
Vector algebra, forces	Chapter 1, 2
Force resultants and moments	Chapter 3
Equilibrium of rigid bodies, free body diagrams	Chapter 4
Trusses, frames, machines	Chapter 5
Center of gravity, centroids and moments of inertia	Chapter 6
Stress and strain	Chapter 7
Mechanical properties of materials	Chapter 8
Axial loading	Chapter 9
Torsion	Chapter 10
Bending	Chapter 11
Transverse shear	Chapter 12
Combined loading	Chapter 13
Stress transformation	Chapter 14
Failure criteria	Class notes
Elastic deflection of beams	Chapter 16
Column buckling	Chapter 17

Acceptable absences:

If you must miss class due to a reason covered in the Religious Creed section of the Academic Calendar webpage or due to an extracurricular activity, please submit a request in writing by the second week of the semester (September 7th).

Academic Integrity:

Please be aware of the common forms of academic dishonesty, which are described in detail in Appendix II of the Student Code. These include (but are not limited to): cheating, plagiarism, false information and representation, and theft or damage of intellectual property. It is expected that the students in this course will hold themselves to the highest ethical standards. Academic dishonesty will not be tolerated, and consequences can range from lost credit for assignments to failing the class. Being reported to the University for disciplinary action may result in a permanent note in your academic record, visible to future employers and graduate programs.