

ME323 MECHANICS OF MATERIALS, SPRING 2016

Meets	Instructor	Office, Phone	Email
MWF 8:30-9:20 AM, ME1052 Office hrs: MWF 9:30-10:30 a.m.	Prof. Sadeghi	ME 3003C, 494-5719	sadeghi@purdue.edu
MWF 11:30-12:20 PM, ME1009 Office hrs: M 12:30-1:30, F 12:30-2:30	Prof. Gonzalez	ME 3061M, 494-0904	marcial-gonzalez@purdue.edu
MWF 1:30 – 2:20 PM, ME1052 Office hrs: MWF 2:30-3:30 PM	Prof. Zhao	ME 1074, 496-0224	kjzhao@purdue.edu

Required Text: Mechanics of Materials, by Roy R. Craig Jr., Publisher: John Wiley and Sons (3rd Edition), also available as E-textbook

Grading Policy: Homework and quizzes: 18%; Exam 1: 26%; Exam 2: 26%; Final Exam: 30%

Homework: Homework assignments are posted on Blackboard (**Fall-2015-ME-32300**) each Wednesday and collected on the following Wednesday in class (please see the course schedule). All problem solutions must be on engineering paper. Homework handed in **after** the specified deadlines will receive **no** credit. All homework grades count toward the final grade.

Quizzes: There will be in-class quizzes throughout the semester. No makeup quizzes will be given.

Examinations:

	<u>Date</u>	<u>Time</u>	<u>Location</u>
Exam 1	Thursday 02/18/16	8:00-10:00 PM	ME 1061
Exam 2	Tuesday 03/29/16	8:00-10:00 PM	ME 1061
Final Exam	TBA		

Closed book and closed notes exams. A list of necessary formulas will be provided with the exams. If a test is missed, the grade will be recorded as zero. *Make-up exams will be given only in the event of documented serious illness or emergency.*

Regrade Requests: Regrade requests *may* be considered for graded exams, homework, or projects but only in cases where (a) points were incorrectly added, or (b) the grader clearly did not read/misread part of the solution. If you have a genuine regrade request, please contact your instructor and upon their approval, staple a sheet clearly explaining your case onto the exam/homework/project and return to the instructor. *Regrade requests will be considered only if submitted within a week of when you first receive your graded work.*

Reading Assignments: The reading assignment schedule lists the sections that are to be studied from the textbook *before* each class meeting.

ME323 MECHANICS OF MATERIALS, SPRING 2016

Teaching Assistants: Teaching assistants will hold office hours in rooms **ME 2134**.

T.A.	Office Hours	Email
Rong Xu	Tuesday - 2:00 - 6:00 PM Thursday - 3:00 - 6:00 PM Sunday - 2:00 - 4:00 PM	xu666@purdue.edu

Switching Sections: To switch from one section to another, you must go through the formal drop and add process.

Calculator Policy: This course follows the Mechanical Engineering Calculator Policy. Accordingly, only TI-30XIIS calculators are to be used for quizzes and exams.

Cheating Policy: To foster a climate of trust and high standards of academic achievement, Purdue University is committed to cultivating academic integrity and expects students to exhibit the highest standards of honor in their scholastic endeavors. Academic integrity is essential to the success of Purdue University's mission. As members of the academic community, our foremost interest is toward achieving noble educational goals and our foremost responsibility is to ensure that academic honesty prevails. *Any copying or cheating will be an automatic "F" grade.*

Please take some time to carefully read Purdue's 'Statement of Integrity and Code of Conduct' and talk with your instructor if you had any questions (www.purdue.edu/purdue/about/integrity_statement.html).

ME323 MECHANICS OF MATERIALS, SPRING 2016

Course Schedule

LEC #	DATE	TOPIC	READING	HW
1 M	1/11	Introduction; review of static equilibrium	1.1-1.4	1 posted
2 W	1/13	Normal and shear stress and strain	2.1-2.3, 2.7	
3 F	1/15	Mechanical properties – Design of deformable bodies	2.4-2.6, 2.8	
M	1/18	Martin Luther King Jr. Day		1 due, 2 posted
4 W	1/20	General definitions of stress and strain – Hooke's law	2.11-2.13	
5 F	1/22	State of stress – Transformation of stresses	8.1-8.3	
6 M	1/25	Principal stresses (for plane stress problems)	8.1-8.4	2 due, 3 posted
7 W	1/27	Maximum shear stress – Strain energy density	8.4,11.1,11.2	
8 F	1/29	Axial deformation and thermal effects	3.1-3.4, 3.6	
9 M	2/1	Statically indeterminate structures	3.5-3.9	3 due, 4 posted
10 W	2/3	Analysis of statically indeterminate planar trusses	3.8-3.10	
11 F	2/5	Torsion of circular bars – Stresses in torsion members	4.1-4.5	
12 M	2/8	Torsion of statically indeterminate members	4.6-4.7	4 due
13 W	2/10	Torsion of statically indeterminate members	4.6-4.7	
14 F	2/12	Equilibrium of beams	5.1-5.2	
15 M	2/15	Shear force and bending moments	5.3-5.4	5 posted
16 W	2/17	Shear force and bending moments	5.3-5.4	
Th	2/18	Exam 1, 8:00-10:00PM (no class on Friday 2/18)		
17 M	2/22	Shear force and bending moments	5.3-5.5	5 due, 6 posted
18 W	2/24	Stresses in beams	6.1-6.2	
19 F	2/26	Stresses in beams - Flexural stresses	6.1-6.3	
20 M	2/29	Flexural stresses	6.3	6 due, 7 posted
21 W	3/2	Shear stress in beams	6.8	
22 F	3/4	Slope and deflection of beams (integration method)	7.1-7.4	
23 M	3/7	Slope and deflection of beams – Discontinuity functions	7.5	7 due, 8 posted
24 W	3/9	Slope and deflection of beams – Discontinuity functions	7.5	
25 F	3/11	Slope and deflection of beams – Superposition method	7.6	
M	3/14	Spring Vacation		
W	3/16	Spring Vacation		
F	3/18	Spring Vacation		
26 M	3/21	Absolute maximum shear stress – Mohr's circle	8.5-8.6	8 due
27 W	3/23	Thin-walled pressure vessels - Mohr's circle	9.1-9.2	
28 F	3/25	Stresses due to combined loads	9.4	
29 M	3/28	Stresses due to combined loads	9.4	9 posted
T	3/29	Exam 2, 8:00 – 10:00 PM (no class on Friday 4/1)		
30 W	3/30	Failure theories	12.3	
31 M	4/4	Failure theories	12.3	9 due, 10 posted
32 W	4/6	Stresses and failure due to combined loads	9.4, 12.3	
33 F	4/8	Energy Method	11.1-11.4	
34 M	4/11	Energy Method	11.5	10 due, 11 posted
35 W	4/13	Energy Method	11.5	
36 F	4/15	Energy Method	11.5	
37 M	4/18	Buckling of columns	10.1-10.3	11 due, 12 posted
38 W	4/20	Buckling of columns	10.1-10.3	
39 F	4/22	Introduction to finite element methods	Handout	
40 M	4/25	Introduction to finite element methods	Handout	12 due
41 W	4/27	Introduction to finite element methods	Handout	
42 F	4/29	Review		
	05/2-7	Final Exams-TBA		