

**EM204 Statics and Engineering Mechanics II**  
**Fall 2008**

Day	Date	Reading Assign.	Topic	Homework Assign
1	9/4	1.1-6.7	Introduction and Review	(1)
2	9/5	7.1-7.4	Torque Diag., Shear stress, Deflection	(2) 7.2, 5, 6 (1 due)
3	9/8	7.1-7.4	Stress, Deflection, Gears	(2) 7.11, 14, 18
4	9/9	7.5	Stresses on Oblique Planes	(2) 7.29, 34
5	9/11	7.7	Power	(3) 7.41, 45, 49
6	9/12	7.8	Statically Indeterminate Cases	(3)(2 due) 7.55, 60, 65
7	9/15	7.9	Design, Selecting Geom. and Material	(3) 7.74, 77
8	9/16		Project 1	
9	9/18	8.1-8.4	2 <sup>nd</sup> Moment of Area, Parallel Axis	(3 due) (4) 8.2, 5, 6
10	9/19	8.1-8.4	2 <sup>nd</sup> Moment of Area, Parallel Axis	(4) 8.7, 9
11	9/22		Problem Session	
12	9/23		Exam 1	
13	9/25	8.5	Bending Stress	(5) 8.14, 20, 23
14	9/26	8.5	Bending stress	(5) (4 due) 8.29, 31
15	9/29	8.6	Shear and Bending Moment diagram	(5) 8.38, 39, 41
16	9/30	8.7	Shear and Bending Moment diagram	(5) 8.61, 62, 63, 67
17	10/2	8.7	Beam Stresses	(6) 8.70, 73, 78
18	10/3	8.8	Shear Stress due to transverse loads	(6) (5 due) 8.89, 87, 80
19	10/5	8.8	Shear Stress due to transverse loads	(6) 8.93, 98
20	10/6	8.9	Design	(7) 8.106, 111
21	10/9	10.1-10.3	Combined loads	(7) (6 due) 10.2, 3, 7
22	10/10		Problem Session	
23	10/13		Project Day	
24	10/14		Exam 2	
25	10/20	10.4-10.5	Transforming stress, Principal stress	(7) 10.12, 13, 16, 30
26	10/21	10.6	Mohr's Circle	(7) 10.45, 47, 50
27	10/23	10.13	Thin-Walled Pressure Vessels	(7) 10.108, 112, 115
28	10/24	10.14	Combined Loading and Design	(8) 10.120, 125, 129
29	10/27	10.14	Combined Loading and Design	(8) (7 Due) 10.132, 134
30	10/28	9.1-9.4	Deflection by Integration	(9) 9.1, 2, 10
31	10/30	9.1-9.4	Deflection by Integration	(9) (8 Due) 9.28, 30
32	10/31	9.6	Deflection by superposition	(9) 9.54, 61
33	11/3		Problem Session	
34	11/4		Exam 3	
35	11/6		Project Day Finite Element Analysis	
36	11/7	9.8	Statically indeterminate	(10) 9.94, 95, 100
37	11/10	9.9	Beam selection in design	(10) (9 Due) 9.110, 111
38	11/11		Applications and Design	(10) 10.137, 141
39	11/13		Applications and Design	(10) 10.143
40	11/14		Review	(10 Due)

## **EM204 Statics and Engineering Mechanics II Fall 2008**

**Text:** Statics and Mechanics of Materials, Riley, Sturges, Morris, 2e, John Wiley and Sons (2002)

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### **Grading:**

Homework/Quizzes/Projects 15%   Exams 55%   Final 30%

### **Homework:**

- Due approximately once per week (listed in syllabus)
- Format as used in Statics I or Sophomore Curriculum
- Work with others is encouraged, but turn in your own homework efforts (no copying)

### **How to Succeed**

- Accept that it is your responsibility to learn the material (in spite of the book or teacher)
- Show up and become engaged with the topics
- Do the homework daily so you can ask questions in class
- Use your resources for help (classmates, upperclassmen, faculty, the learning center)

### **Course Objectives**

After successful completion of this course, students will be able to:

- Identify the likely locations of highest stress of a loaded beam, shaft, or tension member
- Use definitions of stress and strain to calculate stress and strain values in engineering problems
- Determine bending and shear stress at a point in a uniform cross-section beam with both distributed and concentrated loads
- Determine deflection of a beam at a point on a uniform cross-section beam for different types of loading
- Determine bending and torsional stresses in a circular cross-section shaft with both concentrated loads and torques
- Determine deflections of the above shaft
- Determine the principal stresses and strains from the known stresses at a point
- Perform stress transformations in plane stress loading and check answers with Mohr's circle
- Calculate stresses at a point on an object subject to arbitrary loading