

Engineering Statics

ENGR 210

Fall 2008

Dr. Jenni Light

Office location: Talkington 216
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Class Schedule: T/TH 10:30-11:45 MLH B10
Credit hours: 3
Required text: Engineering Mechanics; Statics, 11th ed.
Prerequisites: Math 170 or calculus equivalent; Physics 211

Important notes:

Reasonable accommodations are available for students with a documented disability. Accommodations must be approved through the Disability Resource Center – Admin Annex building, room 205. Call 509-335-3417 to make an appointment with a disability counselor if you think you may need special assistance.

All members of the university community share responsibility for maintaining and promoting the principles of truth and academic honesty. The office of Student Conduct has a policy defining academic dishonesty and the procedures to follow if dishonesty occurs. This information can be found at www.studentconduct.wsu.edu. If academic dishonesty has occurred on any homework, test or other assignment, the incident will be reported to the Office of Student Conduct and the student(s) involved will receive no credit (a score of zero) for that particular material.

After the course you will:

1. have experience applying Newton's laws to real engineering situations;
2. be able to identify significant features and forces in a rigid body;
3. be comfortable with vocabulary engineers use to describe engineering structures
4. have experience applying static analysis to a design project;
5. be able to reason how changes to a structure will affect its performance.

Grading: Grades will be based on three mid-term exams (10% each) and a final exam (20%), homework assignments (25%), quizzes (5%), and a team design project (20%).

Homework will be assigned in each class and will be due on the following Tuesday at the beginning of class. Complete homework on engineering paper with a staple (if necessary) in the top left box, date in the next box, assignment, name, and page/total pages in the fifth box. You may miss three homework assignments without affecting your homework grade or I will drop your three lowest homework scores from your average.

Grade percentages are:

A \geq 90%	C \geq 73.3%
B+ \geq 86.7%	C- \geq 70%
B \geq 83.3%	D+ \geq 66.7%
B- \geq 80%	D \geq 60%
C+ \geq 76.7%	F < 60%

Tentative Schedule

Week	Day	Chapter	Topic	Homework
1	Aug 26	1	Intro, sig figs, units	1 [2, 10, 11, 13]
	28	2.1-3	Vectors, forces	2 [2, 5, 19]
2	Sept 2	2.4	Coplanar force addition	2 [33, 37, 43]
	4	2.5-6	Vectors	2 [59, 65, 82, 89]
3	9	2.7-9	Vectors	2 [99, 101, 109, 114]
	11	3.1-2	Particle equilibrium, free body diagrams	3 [1, 7, 17]
4	16	3.3-4	Particle equilibrium	3 [45, 48, 53]
	18	Review		
5	23	Exam 1		
	25	4.1-4	Moments	4 [10, 15, 29]
6	30	4.4-4.6 *no 4-5*	3D moment; moment of a couple	4 [37, 41, 47]; 4[71, 78, 87]
	Oct 2	4.7-9	Equivalent and resultant moment reductions	4[113, 117, 124];
7	7	4.7-4.9	Distributed loading	4[141, 143, 146]
	9	5.1-2	Rigid body free body diagrams	5[1, 3, 8, 10]
8	14	5.3-5.4	2-D equilibrium	5[18, 27, 41]
	16	5.5-7	3-D equilibrium	5[65, 73, 81]
9	21	6.1-6.3	Trusses; method of joints/zero	6[2, 7, 22]
	23	6.4	Method of sections	6[34, 36, 51]
10	28	6.6	Frames and machines	6[70, 77, 109, 111]
	30	review	*engineering pictures due*	
11	Nov 4	Exam 2		
	6	7.1	Internal forces	7[7, 9, 20, 32]
12	11	7.2	Shear & moment diagrams	7[43, 50, 52]
	13	7.3	Relationship of shear & moment diagrams	7[69, 72, 75]
13	18	8.1-3	Dry friction	8[2, 9, 34, 63]
	20	9.1-3	Center of gravity/mass and centroids	9[45] + handouts 9-1, 9-2
14	25T		Thanksgiving holiday	
	27 T		Thanksgiving holiday	
15	Dec 2	Review	*Design project due*	
	4	Exam 3		
16	9	10.1-4	Moment of inertia	10[34, 45, 105]
	11	review		
	16	Final Exam	10:30 MLH B10	