

Instructor: Xiaohua Li
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Office Hours: MW 3:00pm-5:00pm & F 04:00pm-05:00pm or by appointment

Lecture Time: MW 02:00pm-02:50pm & F 02:00pm-03:50pm room D215

Required Textbook: Engineering Mechanics: Statics and Dynamics, 11th or 12th edition
 R.C. Hibbeler
 ISBN-10: 0138149291
 ISBN-13: 978-0138149291

Course Description: The first part of this course will cover equilibrium of 2D/3D force systems; computations of reactions and internal forces; determinations of centroids and moments of inertia; introduction to vector mechanics. The second half of the course will cover introduction to kinematics and dynamics of particles and rigid bodies; Newton's laws, kinetic and potential energy, linear and angular momentum, work, impulse, and inertia properties.

Pre-requisites: MATH 1720, PHYS 1710/1730.

Course Learn Outcomes (CLO):

Students who successfully complete the course will demonstrate the following outcomes by tests, homework, and written reports:

1. An ability to construct free-body diagrams and to calculate the reactions necessary to ensure static equilibrium.
2. An understanding of the analysis of distributed loads.
3. Knowledge of internal forces and moments in members.
4. An ability to calculate centroids and moments of inertia.
5. Knowledge of kinematic and kinetic analyses and energy and momentum methods for particles and systems of particles.
6. Knowledge of kinematic and kinetic analyses and energy and momentum methods for rigid bodies.

CLO	ABET Student Outcomes (SO)										
	SO1	SO2	SO3	SO4	SO5	SO6	SO7	SO8	SO9	SO10	SO11
1	X				X		X				
2	X				X						
3	X				X						
4	X				X						
5	X				X						
6	X				X						

Grades: Homework 15%	≥ 85	A
Pop Quizzes 15%	70-84.9	B
Exam#1 20 %	55-69.9	C
Exam#2 20 %	40-54.9	D
Final 30 %	< 40	F

Homework: Please turn in your homework on the due day. NO delayed homework will be collected.

Exam and Quiz: quizzes are open book and notes. Exams are closed book closed notes with one page of formula sheet (A4 size, both sides). **There will be NO make-up exam/quiz.** Only students who missed an exam with valid excuse (for instances: medical emergency of him/herself and close relatives, with valid hospital records or doctor's note) will be given make-up exam.

Disability Accommodations: If you need academic accommodations for disability you must have document which verifies the disability and makes you eligible for accommodations, then you can schedule an appointment with the instructor to make appropriate arrangements.

Academic Dishonesty:

There is a zero tolerance policy. Cheating of whatsoever will result in an automatic 'F' in this course and the matter will be turned over to the appropriate student disciplinary committee.

EXAM DATES

Exam #1: Friday, Oct. 14th, 2011, from 2:00pm-3:50pm

Exam #2: Wednesday, Nov. 23rd, 2011, from 2:00pm-2:50pm

Final: Friday, Dec. 16th, 2011, from 2:00pm-4:00pm

MEEN 2130.001/2130.002

Statics and Dynamics Schedule Overview

(Please note the schedule may change based on the needs during the semester)

Week	Date	Topics Covered	Reading Assignment	HW Assignment	HW Due
#1	Aug.25 th - Sept.2 nd	Course Overview, Ch. 2 Force Vectors	Sections 2.1-2.9	2.4, 2.48, 2.69, 2.95, 2.114, 2.124	09/09
#2	Sept.5 th – Sept.9 th NO CLASS ON Sept. 5 th (Labor Day) Happy Holiday	Ch. 3 – Equilibrium of a Particle, Ch.4- Force System Resultants	Sections 3.1-3.4 Section 4.1	3.6, 3.8, 3.14, 3.43, 3.65, 3.68	09/16
#3	Sept.12 th – Sept.16 th	Ch.4- Force System Resultants (continues)	Sections 4.2-4.8	4.3, 4.8, 4.66, 4.80, 4.113, 4.119	09/23
#4	Sept.19 th – Sept.23 rd	Ch.4- Force System Resultants (continues), Ch:5 Equilibrium of a Rigid Body	Section 4.9 Sections 5.1-5.4	4.148, 5.2, 5.3, 5.21, 5.23, 5.40	09/30
#5	Sept.26 th – Sept.30 th	Ch:5 Equilibrium of a Rigid Body (continues), Ch:6 Structural Analysis	Sections 5.5-5.6 Sections 6.1-6.4	5.65, 5.91, 6.6, 6.20, 6.35, 6.134	10/07
#6	Oct. 3 rd – Oct.7 th	Ch:7 Internal Forces, Ch:8 Friction	Section 7.1 Sections 8.1-8.5	7.13, 8.3, 8.7, 8.56, 8.78, 8.89	10/14
#7	Oct. 10 th – Oct.14 th	Review, Exam #1 (see below for exact date), Ch:9 Center of Gravity and Centroid	Review Ch:1- Ch:8 Sections 9.1-9.2	9.3, 9.4,9.11	10/21
#8	Oct. 17 th – Oct.21 st	Ch:10 Moments of Inertia, Ch:12 Kinematics of a Particle	Sections 10.1- 10.5, 10.9	10.6,10.22, 10.28,10.91, 12.35,12.65	10/28
#9	Oct. 24 th – Oct.28 th	Ch:12 Kinematics of a Particle	Sections 12.1- 12.5	12.79, 12.85, 12.107,12.152, 12.183, 12.188	11/04
#10	Oct.31 st –Nov.4 th	Ch:13 Kinematics of a Particle: Force and Acceleration Ch:14 Work and Energy	Sections 12.6- 12.10 Sections 13.1- 13.6	13.5, 13.16, 13.33, 13.58, 13.93, 14.17	11/11
#11	Nov.7 th –Nov.11 th	Ch:14 (continues) Ch:15 Impulse and Momentum	Sections 14.1- 14.3 Section 14.5	14.69, 15.13, 15.22, 15.51, 15.66, 15.84,	11/18
#12	Nov.14 th –Nov.18 th	Ch:15 Continues Ch:16 Planar Kinematics of a Rigid Body, Exam#2 Review	Sections 15.1- 15.4 Sections 15.5- 15.6	15.101, 15.102, 16.19, 16.23, 16.56, 16.60	11/23
#13	Nov.21 st –Nov.25 th NO Class on Nov. 25 th Happy Holiday	Exam #2 (see below for exact date), Ch:16 (continues)	Sections 16.1- 16.3, 16.5	No HW assigned	N/A
#14, 15	Nov.28 th – Dec. 7 th	Ch:16 (continues) Pre-Final Exam Review	Sections 16.6- 16.7	16.99, 16.106,	12/07