



ENGR 210 – STATICS AND DYNAMICS [Fall 2008]

Instructor: Girum Urgessa, Ph.D. Office: Science and Tech II Room 329 E-mail: gurgessa@gmu.edu Phone: (703) 993-1658	Classroom: Science and Tech I - Room 206 Meeting Times: Mon., 10:30 am - 12:10 pm (lecture) Wed., 10:30 am - 1:15 pm (recitation) Office Hours: Mon., 2:00 - 5:00 pm or by appt. Prerequisite: MATH 113 and PHYS 160
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Course Objective: The objective of this course is to study the fundamental concepts of statics (the study of equilibrium of physical bodies subjected to balanced force systems) and dynamics (the study of physical bodies subjected to unbalanced force systems).

Catalog Description: ENGR 210 covers general principles and fundamental concepts including units of measurement; force vectors and their use including vector operations; equilibrium of a particle; resultants of a system of forces; equilibrium of a rigid body; dry friction; center of gravity and centroid; moments of inertia, including parallel axis theorem and radius of gyration; kinematics of a particle; and work and energy.

Textbook: Engineering Mechanics: *Statics and Dynamics*, R.C. Hibbeler, Prentice Hall, 11th Edition (ISBN 0-13-221509-8)

Course Website: <http://mason.gmu.edu/~gurgessa/Teaching.html>

Teaching Assistant: Sailesh Tripathi: Science and Tech II - Room 308
Office hours: Thur. 4:00-7:00 pm or by appt. ; E-mail: stripat1@gmu.edu

Homework: Homework should be of sufficient quality on a standard engineering computation paper. All assigned homework should be turned in by the due date and late homework will not be accepted. Please download format guidelines and sample homework from the course website.

Exams: There will be two mid-term exams and a comprehensive final exam. The format of each exam will be discussed prior to the examination date.

Grading Policy: The final grade will be determined based on the following percentages.

Homework	15%
Mid-term Exam 1	25%
Mid-term Exam 2	25%
Final Exam	35%

Additional Notes: Homework and exams will draw heavily on lecture and recitation materials, hence attendance and class participation are strongly recommended. Cheating or plagiarism of any kind constitutes GMU Honor Code violation (refer to pages 30-31 in the 2008-2009 university catalog).

Course Schedule: Lectures will be presented in the following sequence, however the schedule may change whenever necessary.

Month	Date	Topic	Textbook Sections
August	25	Introduction to ENGR 210 and systems of units	1.1 - 1.5
	27	Recitation 1	
September	1	Labor Day	
	3	Force vectors and operations in 2D	2.1 - 2.8
	8	Force vectors and operations in 3D	
	10	Recitation 2	
	15	Equilibrium of a particle and moment of a force	3.1 - 3.3 ; 4.1 - 4.4
	17	Recitation 3	
	22	Equilibrium of a rigid body	5.1 - 5.4
	24	Recitation 4	
	29	Mid-term Exam 1	topics covered from
October	1	Recitation 5 - Exam solutions and discussions	Aug. 25 to Sep. 17
	6	Truss analysis	6.1 - 6.4
	8	Recitation 6	
	14^X	Centroid and moment of inertia	9.1 - 9.3 ; 10.1 - 10.3; 10.5
	15	Recitation 7	
	20	Internal forces	7.1 - 7.2
	22	Recitation 8	
		27	Mid-term Exam 2
	29	Recitation 9 - Exam solutions and discussions	Sep. 22 to Oct. 15
November	3	Dry friction	8.1 - 8.2
	5	Recitation 10	
	10	Rectilinear and projectile motions	12.1 - 12.2 ; 12.6
	12	Recitation 11	
	17	Absolute dependent motion, force and acceleration	12.9 ; 13.1 - 13.4
	19	Recitation 12	
	24	Work and energy	14.1 - 14.3
	26	Thanksgiving Recess	
December	1	Recitation 13	
	3	Course revision	
	10	Final Exam (comprehensive)	

^X Monday's class will meet on Tuesday (October 14) due to Columbus Day recess.