

School of Mechanical Engineering and Computer Science
Mech 211: Statics

Catalog Data:	Mech 211 Statics ; 3 credits Static equilibrium analysis of particles and rigid bodies, free-body diagram, shear-moment diagrams, friction, center of gravity, moments of inertia.	
Class Schedule:	Three 50-minute lecture sessions per week, for one semester.	
Laboratory Schedule:	None	
Prerequisites by Course:	Math 172 or c// and Phys 201 or c//	
Prerequisites by Topic:	Calculus and Physics	
Required Texts:	Johnston, E. R. Clausen, W. E., and Cornwell, P. J., <i>Vector Mechanics for Engineers: Statics</i> , 8 th Edition, 2007, McGraw-Hill Publishing Company.	
Course Coordinator:	Dr. Linda (Xiaolin) Chen	
Course Objectives:	<ol style="list-style-type: none"> 1. To develop the ability to apply mathematics and physics to solve basic engineering problems. 2. To provide a working knowledge of the fundamental principles of engineering mechanics that are required for solving statics problems. 	
Topics Covered:	<ol style="list-style-type: none"> 1. Vectors 2. Forces, moments and couples 3. Resultant force systems 4. Free-body diagrams and equilibrium 5. Truss analysis 6. Frame and machine analysis 7. Center of mass and centroids 8. Shear & moment diagrams 9. Principle second moments of area 10. Friction 	
Lab Experiments and Activities:	None	
Course Outcomes:	Students will be able to:	
	Assessed for Program Outcomes	A-1. Manipulate vectors to obtain analytical solutions for bodies in equilibrium. A-2. Demonstrate knowledge of vector mechanics of bodies at rest (vectors, forces, moments, free body and equilibrium analysis.) A-3. Apply vector mechanics to determine reactions at the supports, external and internal forces, and geometric and inertial properties of solid bodies in static equilibrium. E-2. Develop appropriate mathematical models to formulate solutions for bodies at rest.
	Other	K-4. Use software to analyze bodies in static equilibrium.

<i>Relationship of Course to Program:</i>	Meets: Educational Objectives <u>1, 2</u> Program Outcomes <u>A, E, K</u>		
<i>Prepared by:</i>	Dr. Linda (Xiaolin) Chen	Date:	October 10, 2008
<i>Approved by CAC:</i>			