

<b>COURSE NUMBER</b>	<b>ME 339</b>		
<b>COURSE TITLE</b>	<b>Fundamentals of Mechanical Design</b>		
<b>COURSE STRUCTURE</b>	(3-0-3) (lecture hr/wk - lab hr/wk – course credits)		
<b>COURSE COORDINATOR</b>	Z. Ji		
<b>COURSE DESCRIPTION</b>	<b>For industrial engineering majors.</b> Topics include kinematics of mechanisms, machine components, and a brief introduction to mechanical vibrations. Students gain the ability to deal with design problems from the viewpoint of a non-specialist.		
<b>PREREQUISITE(S)</b>	Mech 234 – Engineering Mechanics		
<b>COREQUISITE(S)</b>	None		
<b>REQUIRED, ELECTIVE OR SELECTED ELECTIVE</b>	Required for non-ME		
<b>REQUIRED MATERIALS</b>	David H. Myszka, Machines and Mechanisms: Applied Kinematic Analysis, 3rd Ed., Prentice-Hall, 2004, ISBN: 0131837761.		
<b>Other supplemental materials (not Required)</b>	None		
<b>COMPUTER USAGE</b>			
<b>COURSE LEARNING OUTCOMES/ EXPECTED PERFORMANCE CRITERIA:</b>	Course Learning Outcomes	SOs*	Expected Performance Criteria
	1. formulate and perform kinematics analysis of linkages.	a, e, k	Exam Question (80% of the students will earn a grade of 70% or better on this question)
	2. formulate and perform kinematics analysis of cam and gear mechanisms	a, e, k	Exam Question (80% of the students will earn a grade of 70% or better on this question)
	3. perform basic calculation related to the use of common machine components: fasteners, springs, and clutches	a, e, k	Exam Question (80% of the students will earn a grade of 70% or better on this question)
	4. perform basic calculation related to the use of bearings and lubrication	a, e, k	Exam Question (80% of the students will earn a grade of 70% or better on this question)
	5. perform basic calculation related	a, e, k	Exam Question (80%

	to mechanical vibrations.		of the students will earn a grade of 70% or better on this question)									
<b>CLASS TOPICS</b>	<ol style="list-style-type: none"> <li>1. Linkages: position analysis</li> <li>2. Linkages: velocity and acceleration</li> <li>3. Cams</li> <li>4. Fasteners</li> <li>5. Springs</li> <li>6. Clutches</li> <li>7. Gears and gear trains</li> <li>8. Bearings and lubrication</li> <li>9. Vibrations</li> </ol>											
<b>STUDENT OUTCOMES (SCALE: 1-3)</b>	a	b	c	d	e	f	g	h	i	j	k	
	3				2						2	
	3 – Strongly supported			2 – Supported			1 – Minimally supported					

\* Student Outcomes.