

COURSE SYLLABUS



Education That Works For a Lifetime

Course Title:	CAD 3D Mechanical AutoCAD	Date of last update: (If this syllabus is being changed as part of a course change or new course proposal, enter the date of the proposal)	1995	
Department:	Business/CIS/Technology			
Curriculum:	Engineering Science/Technology Studies			
Course Descriptors: (Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.)	Course Code: (eg. ACC 101)	CAD*218	Prerequisites: Prerequisite: C- or better in Mechanical AutoCAD (CAD*133)	
	Course Type:	L/D		
	L: Lecture B: Lab X: Combined Lecture/Lab U: Studio N: Internship P: Practicum D: Distance Learning I: Individual / Independent			Corequisites: None
	Credit Hours:	3		
	Developmental: (yes/no)	No	Other Requirements: None	
	Lecture:	3		
	Lab:	0		
	Clinical:	0		
	CONTACT HOURS:	TOTAL: 3		
	Class Maximum:	19		
Semesters Offered:	F/S			
Catalog Course Description: (Check with the Public Information Office to assure consistent taxonomy, terminology and style.)	Applies engineering and technological principles to the design of everyday items, machine elements, and mechanical systems. Students will create 3D wireframe and solid machines from which engineering and production drawings will be derived using AutoCAD/CADKEY software.			
Course Objectives & Their Evaluation: (A broad, content-based statement about what the instructor will attempt to achieve in the course.)	This advanced CAD course will introduce students to mechanical drafting and design. Key areas of emphasis will include mechanical elements, single-part modeling, assembly modeling, production drawings, and geometric dimensioning and tolerancing. Students will be responsible for completing a vast array of drawing assignments utilizing their CAD workstation. These drawings, in combination with homework assignments, group design projects, quizzes and tests, will serve as a measure of student mastery/proficiency.			
Specific Outcomes: (Measurable skills students will be expected to demonstrate or specific tasks the student should be able to perform, as evidence that the course content has been mastered.)	At the outcome of this course, the student will be able to: <ol style="list-style-type: none"> 1. use currently available Computer Aided Drafting (CAD) software and hardware in order to solve mechanical design problems 2. apply current engineering standards when completing mechanical drawings 3. create mechanical elements such as gears, cams, pulleys, fasteners, and weldments using a CAD workstation 4. create mechanical parts and assembly drawings using a CAD workstation 5. identify terminology associated with mechanical elements and systems 			
Topical Outline:	<ol style="list-style-type: none"> 1. Introduction and orientation to mechanical drafting and design <ol style="list-style-type: none"> a. castings b. forgings c. weldments d. piping drawings 			

	<ul style="list-style-type: none"> e. machine design f. ergonomics 2. Two dimensional drawings 3. Three dimensional drawings 4. Geometric Dimensioning and Tolerancing 5. Wireframe Modeling 6. Solid Modeling and Construction Techniques 7. Mechanical Elements and Mechanisms <ul style="list-style-type: none"> a. gears b. linkages c. bearings d. pulleys e. sprockets f. cams 8. Fasteners 9. Assembly Drawings 10. Production Drawings 11. Annotations
<p>Suggested Instructional Materials</p>	<p>CD visualization sets</p> <p>Computer Workstation Display</p> <p>Overheads</p> <p>Board Sketching</p> <p>Various examples of drawings, models, tools, and equipment from industry</p>
<p>Resources, Equipment, & Special Facilities Required:</p>	<p>Computer Laboratory</p> <p>Software Upgrade Contract:</p> <ul style="list-style-type: none"> a. \$6,000 per year for AUTOCAD b. \$1,581.25 per year for CADKEY <p>Computer Upgrades: Every 2-3 years</p>