

COURSE SYLLABUS

Course Title:	Mechanical Design and Modeling	Date submitted:	01/08 (08-44)												
Department:	Business and Technology														
Curriculum:	Technology Studies/Engineering Science														
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) <table border="1"><tr><td>CAD*268</td></tr></table> Course Type: <table border="1"><tr><td>L/B/X</td></tr></table> A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: M: Seminar Internship P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio Elective Type: <table border="1"><tr><td>G</td></tr></table> E: English FA: Fine Arts HI: History HU: Humanities LAS: Liberal Arts & Sciences FL: Foreign Language M: Math S: Science SS: Social Science G: General Credit Hours: <table border="1"><tr><td>3</td></tr></table> Developmental: (yes/no) <table border="1"><tr><td>No</td></tr></table> Lecture: <table border="1"><tr><td>3</td></tr></table> Clinical: <table border="1"><tr><td>0</td></tr></table> Lab: <table border="1"><tr><td>1</td></tr></table> Studio: <table border="1"><tr><td>0</td></tr></table> Other: <table border="1"><tr><td>0</td></tr></table> Contact Hours: TOTAL: <table border="1"><tr><td>4</td></tr></table> Class Maximum: <table border="1"><tr><td>19</td></tr></table> Semesters Offered: <table border="1"><tr><td>F, Sp</td></tr></table>	CAD*268	L/B/X	G	3	No	3	0	1	0	0	4	19	F, Sp	Prerequisites: C- or better in CAD 3D Mechanical AutoCAD (CAD*218)
	CAD*268														
	L/B/X														
	G														
	3														
	No														
	3														
	0														
	1														
	0														
0															
4															
19															
F, Sp															
Corequisites: None															
Other Requirements: None															
Ability-Based Education (ABE) Statement: At Tunxis Community College students are assessed on the knowledge and skills they have learned. The faculty identified the General Education Abilities critical to students' success in their professional and personal lives. In every class, students are assessed on course abilities, sometimes program abilities, and, in most classes, at least one General Education Ability. Students will receive an evaluation of the degree to which they have demonstrated or not demonstrated that General Education Ability.															
Catalog Course Description: Enables students to develop advanced skills and understanding of the conceptual design process. Solid and parametric modeling techniques are explored primarily using AutoCAD's Mechanical Desktop and CADKEY's parametrics. Topics include assembly modeling, rapid prototyping, parametric and constraint-based modeling, mass property analysis, designing for manufacturing/assembly, and data exchange standards.															
Topical Outline: List course content in outline format.	1. Mechanical Design 2. Engineering Visualization 3. Navigating a three-dimensional work environment 4. Parametric and Constraint-based Modeling 5. Single-Part Modeling 6. Assembly Modeling														

	<ol style="list-style-type: none"> 7. Designing for Manufacturability/Assembly 8. Surfaces 9. Documentation 10. Data Exchange Standards 11. Mass Property Analysis 12. Rapid Prototyping 13. Technical Illustration
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, the student will be able to do the following:</p> <p>COURSE:</p> <ol style="list-style-type: none"> 1. utilize Computer Aided Drafting (CAD) software and hardware in order to model mechanical parts and assemblies 2. constrain a model using algebraic equations 3. manage an array of parts in order to create an assembly drawing 4. analyze the mass (inertial) properties of a solid part 5. create technical illustrations from complex models for demonstration purposes <p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i></p> <p>TECHNOLOGY STUDIES ASSOCIATE DEGREE:</p> <ol style="list-style-type: none"> 3. apply the basic concepts of science and mathematics to the study of electricity and electronics, materials, computer-aided design (CAD), manufacturing, and construction 4. utilize appropriate computer software when creating technical drawings and presentations 5. create two-dimensional technical drawings, solid models, and surface models, according to current engineering standards 7. demonstrate technical competency in a functional area of technology. The specialization may include, but is not limited to: electricity, computer aided drafting and design, manufacturing, and construction <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>Assessment will be based on the following criteria:</p> <p>Homework assignment</p> <p>Hands-on projects</p> <p>Quizzes and exams</p>
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required: Computer Lab with CAD software</p> <p>Desired:</p>
<p>Textbook(s)</p>	<p>Refer to current academic year printout.</p>