Syllabus for ME137-01: Computer Aided Engineering

Spring 2019
Instructor: Sam Pouryoussefi

Designation:	ME137
Catalog Description:	Introduction to the use of modern computational tools used for design and analysis. Primary focus is on product design with solid modeling and finite-element analysis. Software used is representative of that found in industry. Topics such as 2-D and 3-D drawing, tolerance specification, and FEA validation are also covered.
Text Books and Other Required Materials:	
Course Objectives/ Student Learning Outcomes:	After successful completion of this class, the students will be able to: 1. Construct 3-D solid models, 2-D drawings, assembly and sub-assembly structures. 2. Generate 2-D and 3-D models for finite element analysis. 3. Apply mathematical skills in the design and analysis of model generations and analysis. 4. Analyze, verify and interpret FEA results. 5. Follow design procedures including problem identification, data collection, problem formulation, approaches, methodology, and solution. 6. Use industry-standard software packages and analytical tools. These abilities will be demonstrated in homework and exams, as well as through active participation in a multiple student design team in the course project.
Program Learning Outcomes:	
Prerequisites by Topic:	
Course Policies:	
Academic Dishonesty Statement:	a. Each student in this course is expected to abide by the University of California, Merced's Academic Honesty Policy. Any work submitted by a student in this course for academic credit will be the student's own work. b. You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e mail, an e mail attachment file, a diskette, or a hard copy. Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Policy can also be extended to include failure of the course and University disciplinary action. c. During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the

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	examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.
Disability Statement:	Accommodations for Students with Disabilities: The University of California Merced is committed to ensuring equal academic opportunities and inclusion for students with disabilities based on the principles of independent living, accessible universal design and diversity. I am available to discuss appropriate academic accommodations that may be required for student with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances. Students are encouraged to register with Disability Services Center to verify their eligibility for appropriate accommodations.
Topics:	- Introduction to solid modeling. - Concepts of 3-D modeling. - Model structure. Engineering drawing. - Fundamentals of assembly and sub-assembly. - Parametric modeling. - Advanced feature-based design. - Fundamentals of modeling for finite element analysis. - Analysis methods. - Design creativity. - Design for manufacturability. - Real-world problems: critiques, analysis, and improvements.
Class/laboratory Schedule:	
Midterm/Final Exam Schedule:	
Course Calendar:	
Professional Component:	
Assessment/Grading Policy:	
Coordinator:	
Contact Information:	Sam Pouryoussefi spouryoussefi@ucmerced.edu
Office Hours:	