SPRING 2007

ME 419/519 COMPUTER AIDED DESIGN AND MANUFACUTRING

R 6:00 P.M. - 8:30 P.M.

INSTRUCTOR:

Dr. Jan Gou

Office hours: MW, 11:00 a.m. - 12:00 a.m., R, 3:00 - 4:00 p.m., also by appointment

TEXTBOOK

Principles of CAD/CAM/CAE Systems, by Kunwoo Lee, Addison Wesley Longman, 1999.

Pro/Engineer Wildfire Instructor, by David S. Kelley, McGraw-Hill, 2007.

BULLETIN DATA

Introduction to computer aided design (CAD) and computer aided manufacturing (CAM) principles and their applications as fundamental elements of contemporary design and manufacturing.

COURSE OBJETIVES

1. Understand the role of CAD/CAM/CAE systems in contemporary product design and manufacturing processes.
2. Learn mathematical representations of curves and surfaces that are used in CAD/CAM systems.
3. Use CAD/CAM systems to generate wire-frame models, surface models, solid models, and assembly models.
4. Learn fundamental computer numerical control (CNC) programming in computer-aided manufacturing.
5. Learn rapid prototyping and manufacturing that can be used to enhance design quality and compress the product development cycle.
6. Learn standards for communicating design data between disparate systems.

TOPICS COVERED

Introduction to CAD/CAM/CAE systems
Components of CAD/CAM/CAE systems
Geometric transformation
Mathematical representations of curves and surfaces
Wire-frame, surface, solid, and assembly modeling techniques
Numerical control system
NC programming
Rapid prototyping and manufacturing
Data exchange in CAD/CAM/CAE systems

GRADING POLICY

Class Attendance	5%
Homework	30%
Project	20%
Mid-Term Exam	20%

Final Exam	25%
Total	100%

COURSE GRADE: A (90-100); B (80-89); C (70-79); D (60-69); F (<60)

FINAL EXAM: 6:00 p.m.- 8:00 p.m., Tuesday, May 1, 2007

CLASSROOM POLICY

1. Homework assignments will be announced in class and they are due at the beginning of the class period on the due day. If homework assignments are late, points will be deducted. Each day an assignment is late 50% will be taken off.
2. There will be one mid-exam and one comprehensive final exam. All examinations missed due to illness or emergency requires a written, verified excuse or a grade of zero will be assigned.
3. Class attendance is necessary for satisfactory performance. It is student's responsibility to find out about all the assignments and announcements made in class. The student is held responsible for all missed work and classroom information. Class roll will be taken at the beginning of the term to ensure that students are attending the correct class. Class rolls will not be taken each time, but may be taken at any time to identify absentees. Excessive absences are grounds for failure.
4. Cheating and plagiarism are serious academic matters and they will be handled by the following policy and by the University policy. A grade of zero is assigned for the entire assignment. For example, zero is assigned for the entire test and not for individual parts of the test. Automatic failure of the course can result from a zero grade on an individual assignment. The case will be reported to the Dean of Students for disciplinary action.
5. In accordance with Americans Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodation. The office of Special Student Services will certify a disability and advise faculty members of reasonable accommodations. If you have a specific disability that qualifies you for academic accommodations, please notify your instructor and provide certification from Disability Services (Office of Special Students Services).
6. Since all classes do not progress at the same rate, the instructor may wish to modify the syllabus requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of exams, or the number and sequence of assignments. If such a modification is warranted, students will be given adequate notification in writing.

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Dr. JAN GOU

	DATE			TOPIC	ROOM
1	Thursday	11	January	Chapter 1 - Chapter 5	
2	Thursday	18		Chapter 1 - Chapter 5	
3	Thursday	25		**Tutorial** Chapter 3/Chapter 4 2D/3D	
4	Thursday	1	February	**Tutorial** Chapter 5/Chapter 6 3D	
5	Thursday	8		**Tutorial** Chapter 7/Chapter 10 3D	
6	Thursday	15		Chapter 6	
7	Thursday	22		Chapter 6/Chapter 7	
	Thursday	1	March	**Tutorial** Chapter 11/Chapter 13 3D	
8	Thursday	8		**Mid-Exam**	
	Thursday	15	Spring Break		
9	Thursday	22		Chapter 8	
10	Thursday	29		**Tutorial** Chapter 12 Assembly	
11	Thursday	5	April	Chapter 11	
12	Thursday	12		Chapter 11/Chapter 12	
13	Thursday	19		Chapter 12/Chapter 14	
14	Thursday	26		**Project Demo and Final Review**	

EXAM: 6:00 p.m.- 8:00 p.m., Tuesday, May 1, 2007

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