University of Southern California
Viterbi School of Engineering
Department of Aerospace and Mechanical Engineering

AME 308 – Computer Aided-design for Aero-Mechanical Design

Practical Information

Class number:	Lecture - Lab 28735, 28736, 28738
Number of Units:	3 units
Hour/Day:	2:00 p.m. – 4:50 p.m. M/T/Th
Room:	SAL 109, 127

Instructor:	Dr. Y. D. Staelens BHE 317 (213) 740-7754 staelens@usc.edu

Office Hours: MTTh: 9:30 a.m. – 11:30 a.m.

Textbook: James D. Bethune; Engineering Design and Graphics with SolidWorks; Prentice Hall, Boston, 2009 (Required)

Siemens PLM Software; Getting started with Solid Edge with Synchronous Technology; Siemens, 2009 (Required)

TA's: Shalini Reddy (sreddy@usc.edu)
Jitraporn Wongsa-Ngam (wongsang@usc.edu)
Hanchel Cho (hancheoc@usc.edu)

Course Objective

This course will introduce you to some of the CAD tools widely used in industry today. The tools will include two solid modeling packages, Solid Edge ST2 and SolidWorks 2010, a motion analysis package based on a program called ADAMS and at least one finite element package. We'll see how these tools enable you to perform in hours a variety of analysis tasks that would otherwise take weeks.

Course Outline

1) How to create properly constrained sketches using sketch tools, dimensions, and geometrical relationships.
2) How to create part features from sketches.
3) How to create technical drawings with the appropriate symbols.
4) How to create assemblies from parts and assembly relationships.
5) How to simulate the response of a structure to applied loads.
6) How to simulate the response of a machine to applied motion.

Course Grading

Grades will be determined from a combination of homework scores, project scores, and exam scores. Typically, homework will be assigned each week. There will be two extended project assignments. All homework and project assignments will require both electronic and hardcopy submittals. Due dates/times will be posted with each assignment. We will make every effort to return graded assignments within one week. Homework will contribute 40% of the grade; projects 20%; and exams 40%.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 AM - 5:00 PM, Monday through Friday. The phone number for DSP is (213) 740-0776.

Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that an individual will submit his or her own work unless otherwise allowed by an instructor, and the dual obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A (http://web-app.usc.edu/scampus/wp-content/uploads/2008/07/appendix_a.pdf).
Should there be any suspicion of academic dishonesty, an automatic grade of F will be given for the given assignment or exam and students will be referred to the Office of Student Judicial Affairs and Community Standards for further review. The Review process is described at: http://web-app.usc.edu/scampus/1400-academic-integrity-review-process/

Course Schedule

Week	Date	Topic	Homework Due
1	10-Jan	Solid Works 2010 - Introduction, Basics, Sketches (Ch 1,2)	
	11-Jan		
	13-Jan		
2	17-Jan	**No Lecture – Lab (Martin Luther King Day)**	-
	18-Jan	Solid Works 2010 - Features (Ch 3)	
	20-Jan		
3	24-Jan	Solid Works 2010 - Drafts, Technical Drawing (Ch 4,7)	HW #1, #2
	25-Jan		
	27-Jan		
4	31-Jan	Solid Works 2010 - Assemblies, Fasteners (Ch 5, 6)	HW #3
	1-Feb		
	3-Feb		
5	7-Feb	Solid Works 2010 - Gears, Pulleys, Chains, Cams, Springs (Ch 9, 11)	HW #4
	8-Feb		
	10-Feb		
6	14-Feb	Solid Works 2010 - Finite Element Analysis	HW #5
	15-Feb		
	17-Feb		
7	21-Feb	**No Lecture – Lab (Presidents' Day)**	-
	22-Feb	Solid Works 2010 – Project	
	24-Feb		
8	28-Feb	Solid Works 2010 – Project	HW #6
	1-Mar		
	3-Mar		
9	7-Mar	**Solid Works 2010 – Final**	Project #1
	8-Mar		
	10-Mar		
10	14-Mar	**No Lecture - Lab (Spring Break)**	-
	15-Mar		
	17-Mar		
11	21-Mar	Solid Edge ST2 – Parts	-
	22-Mar		
	24-Mar		
12	28-Mar	Solid Edge ST2 – Assemblies	HW #7
	29-Mar		
	31-Mar		
13	4-Apr	Solid Edge ST2 – Drafts	HW #8
	5-Apr		
	7-Apr		
14	11-Apr	Solid Edge ST2 - Project, Finite Element Analysis	HW #9
	12-Apr		
	14-Apr		
15	18-Apr	Solid Edge ST2 - Project	-
	19-Apr		
	21-Apr		
16	25-Apr	**Solid Edge ST2 – Final**	Project #2
	26-Apr		
	28-Apr		

Important Dates: Solid Works 2010 Final: Week 9 – 7-10 March 2011
Solid Edge ST2 Final: Week 16 – 25-28 April 2011
Last day to drop class without "W": January 28th 2011

Note: The above schedule is tentative and is subject to change if needed.
Last Update 01/03/2011