

San José State University
Department of Mechanical Engineering
ME 165 Computer-Aided Design in Mechanical
Engineering, Section 01 (41381), Fall 2016

Instructor:	Dr. Eduardo Chan
Office Location:	ENG 213
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Office Hours:	MW 8:45pm – 9:15pm and by appointment
Class Days/Time:	MW 7:30pm-8:45pm
Classroom:	ENG 213
Prerequisites:	CE 112, ME 20, ME 130 or MATH 129a*

* You must turn in an unofficial transcript with the prerequisites highlighted by the second class period, or you will be dropped from the class.

Course Web Page

Copies of the course materials such as the syllabus, major assignment handouts, etc. may be found on Canvas at <https://sjsu.instructure.com>. You need to be registered for the course to have access on Canvas. The students are responsible for regularly checking for course handouts and assignments on Canvas (or other communication system as indicated by the instructor).

Course Description

Theory and application of CAD. 2 dimensional and 3-dimensional modeling using commercial CAD software. Application to finite element and mechanism analysis.

Course Goals and Student Learning Objectives

Course Content Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the role of computer-aided design in practice of mechanical engineering, as well as the basic requirements of software and hardware for computer-aided design.

2. Exercise proficiency in creating computer-aided design models for mechanical engineering parts, drawings, and assemblies, using modern commercial CAD software.
3. Utilize analysis tools such as finite element methods and mechanism modeling in conjunction with computer-aided design software tools for advanced design of mechanical engineering components.

Required Texts/Readings

Textbook

Design with Creo Parametric 2.0 by M. Rider.
Published by SDC Publications, ISBN 978-1-58503-827-5.

Optional Reference

PTC Precision eLearning – <http://www.ptc.com/go/tristar/sjsu>

Classroom Protocol

The students are expected to attend class regularly and actively participate in classroom discussions. Please arrive on time so as not to distract other students, especially during computer lab sessions. Use of cell phones is prohibited in class or lab.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Assignments and Grading Policy

The grading components of this course are listed as follows:

5% for Class Participation.

20% for Homework

25% for CAD Practicals/Labs etc.

20% for Term Project (details to be announced in class)

30% for Final Exam.

Submissions of homework assignments, CAD tutorials and final term project reports should be done via Canvas. **Late or email submissions will not be accepted. The student must participate in all grading components to obtain a passing grade.**

Grades are assigned according to the following table:

Letter Grade	GPA Scale	Percent Scale	Borderline
	(4.30)	100.0	
	(4.15)	98.4	
A	4.00	96.8	
	3.85	95.2	A / A-
A-	3.70	93.6	
	3.50	91.4	A- / B+
B+	3.30	89.3	
	3.15	87.7	B+ / B
B	3.00	86.1	
	2.85	84.5	B / B-
B-	2.70	82.9	
	2.50	80.7	B- / C+
C+	2.30	78.6	
	2.15	78.0	C+ / C
C	2.00	75.4	
	1.85	73.8	C / C-
C-	1.70	72.1	
	1.50	70.0	

This percent scale sets a lowest adequate score at 70, which is the minimum threshold for a grade of “C-“.

University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University's Academic Integrity policy](http://www.sjsu.edu/senate/S07-2.htm), located at <http://www.sjsu.edu/senate/S07-2.htm>, requires you to be honest in all your academic

course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sa.sjsu.edu/judicial_affairs/index.html) is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. **Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University.** For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

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Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	Aug 22 – Aug 26	Course Introduction; Preview of software etc.
2	Aug 29 – Sep 2	Introduction to CAD; Sketching & 2D Constraints
3	Sep 5 – Sep 9	Protrusions & Revolved Solids; Datums & 3D Constraints; No class on Sep 5 (Labor Day)
4	Sep 12 – Sep 16	Datums; Simple Features (Holes, Chamfers etc)
5	Sep 19 – Sep 23	Groups, Mirrors & Patterns; Parametric Relations & Features
6	Sep 26 – Sep 30	Model Hierarchy; Lab #1
7	Oct 3 – Oct 7	Part Drawings
8	Oct 10 – Oct 14	Sweeps & Blends
9	Oct 17 – Oct 21	Sweeps & Blends; Assemblies & Assembly Drawings
10	Oct 24 – Oct 28	Assemblies; Lab #2
11	Oct 31 – Nov 4	Mechanism Modeling
12	Nov 7 – Nov 11	Intermediate CAD Skills Tutorial Demos
13	Nov 14 – Nov 18	Mechanism Modeling; FEA
14	Nov 21 – Nov 25	FEA; No Class on Nov 23 (Day before Thanksgiving)
15	Nov 28 – Dec 2	FEA & Optimal Design
16	Dec 5 – Dec 9	FEA & Optimal Design; Family Tables
17	Dec 12 – Dec 16	Final Lab ; (Last Day of Class – Dec 12)
	Dec 14 (Wednesday)	Final Exam 19:45 – 22:00 in ENG 213