San Jose State University
Mechanical Engineering Department

ME 20 **Design & Graphics** **Fall 2019**

Faculty: Prof. Ken Youssefi, Email: kyoussefi@aol.com
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Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally *3 hours per unit per week* with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practical. Other course structures will have equivalent workload expectations as described in the syllabus.

Prerequisites: Co-requisite E10 for engineering majors

Required Text: Bertoline, Hartman and Ross "Fundamentals of Solid Modeling & Graphics Communication", 7th ed., 2019, McGraw-Hill, custom bound version for Mechanical Engineering Dept. ME20 (soft cover). Available in SJSU bookstore. ISBN # 9781307317565.

Recommended Text:

Laboratory assignments: Lab work will include solid modeling (3D) using SW. Try to finish the lab assignments during the lab period. **Lab assignments must be uploaded to Canvas**. **Refer to Canvas for the due date. Canvas upload will be closed after the due date. No assignment will be accepted after the due date.** Lab period will also be used for the design project.

Department Policy on Computer Lab Use: Use of the department and college computer labs is a privilege that can be lost by abuse. The following are grounds for loss of lab privileges:

- Unauthorized copying of software, either from the computer, or using the computer.
- Installation of any software, media, or files that are not specifically required to do your class activities. You may not install messenger, music, gaming, or any other software program on computers in the lab.
- Abuse of computers or hacking or modifying the operating system, user interface, or desktop in any way.

Loss of your computer lab privileges would mean that it will be up to you to arrange to meet your lab requirements outside of the campus computer labs.

Grading: Lab works & Homework 20%, Exams (two) 50% , Project 20%, Class participation 10%

Lab section scores (SW exam) will be adjusted by the course coordinator in the event of large discrepancies between sections' scores.

Letter grade distribution

A+	**98-100%**	**B+**	**84-86%**	**C+**	**71-73%**	**D+**	**57-59%**
A	**90-97%**	**B**	**77-83%**	**C**	**63-70%**	**D**	**49-56%**
A-	**87-89%**	**B-**	**74-76%**	**C-**	**60-62%**	**D-**	**46-48%**
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Course Goals

The course goals are:

- To help students visualize three dimensional objects.
- To introduce students to technical freehand sketching (pictorials).
- To introduced students to the principal of orthographic projections.
- To introduce students to technical drawings; shop, assembly, and exploded.
- To introduce students to proper dimensioning and tolerancing.
- To introduce students to computer-aided design tools, 2D and 3D (solid modeling).
- To introduce the students to engineering design process through a design project and lab. work.

Student Learning Objectives

The students should be able to:

- Freehand sketch a 3D view of an object (isometric, oblique and perspective).
- Draw the standard two dimensional views (top, front and profile) of an object.
- Draw section and auxiliary views
- Apply the proper dimensions and tolerances to parts.
- Prepare professional (formal) 2D views for fabrication.
- Draw three dimensional objects using SolidWorks (solid modeling software).
- Understand the engineering design process and the implementation of different design phases.

Academic Integrity: Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf 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 is available at http://www.sjsu.edu/studentconduct/.

Campus policy in compliance with the Americans with 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 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

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 section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/**A(-2 a)4 (n I6)-nuI6 8 T ed uo a aa- (he)4 ()4 wC 5T nent2srhm**

COURSE SCHEDULE

Week/Date (Mon.)		Subject	Reading Assign. (Ch., 7th ed.)
1	8/21 – 8/23	No Labs on Wednesday, Thursday, and Friday	
2	8/26	Lect. - Introduction and course organization	(1)
		Lab. - Introduction to 3D modeling using SW, lab. work #1 (Sketching and Extrusion).	
3	9/2	**Lect. - Holiday – Labor Day**	
		Lab. - Solid modeling with SW, lab. work #2 (Sketching and Extrusion)	
4	9/9	Lect. - Introduction to 3D modeling: modeling fundamentals, (**Polling practice**) surface and solid modeling	(2, 3, notes)
		Lab. - Solid modeling with SW, lab. work #3 (Extrusion and Revolve)	
5	9/16	Lect. - Intro to 3D modeling; design intent, Boolean operations (**Polling starts**)	(4, notes)