

San José State University
School of Engineering/Mechanical Engineering

**ME 165, Computer Aided Design in Mechanical Engineering, Section 01,
Spring 2020**

Course and Contact Information

Instructor:	Ed Cydzik
Office Location:	Part-time faculty office – E348
Telephone:	650.954.7278
Email:	edward.cydzik@sjsu.edu
Office Hours – by appointment:	MW 6:30 PM – 7:15 PM E348 by appointment, Chat via Canvas, email
Class Days/Time:	Tu., Th. 7:30 PM – 8:45 PM
Classroom:	CL 204 (1 st lecture), E213 for the balance of the semester
Prerequisites:	ME 020, CE 112, ME 130 or MATH 129A – please provide an unofficial transcript with the prerequisites highlighted by the date noted in CANVAS

Course Format:

This will be primarily an in-person class. The Canvas Learning Management System (LMS) will be used to augment class material dissemination. All materials handed out or posted in Canvas LMS will be restricted for students use for class purposes.

Course Description

Theory and application of Solid Modeling to create solid models (SolidWorks®) and associated engineering drawings and assemblies, and to perform finite element analyses of components.

Prerequisites: ME020, CE112, and either ME130 or MATH129A, with a grade of C- or better in each course.

Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering.

Students will be expected to work individually on homework and other assignments. Some assignments may integrate a number of other technical skills such as additive manufacturing.

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

- Explain how CAD is used in practice
- Create CAD solid models, assemble components to create assembly drawings, derive 2D engineering drawings from these solid models, apply GD&T rules to dimension these drawings, apply basic Tolerance Analyses to ensure components will assemble at worst case conditions,
- Apply FEA tools to ensure components meet component design goals.

Textbooks:

1) REQUIRED: Beginner's Guide to SolidWorks 2019, Level I, Parts, Assemblies, Drawings, PhotoView 360 and Simulation Express.

Author: Alejandro Reyes MSME, CSWE, CSWI
SDC Publications
ISBN: 978-1-63057-220-4

2) REQUIRED: Official Guide to Certified SOLIDWORKS Associate Exam: CSWA, CSWA-SD, CSWSA-FEA, CSWA-AM SOLIDWORKS 2017-2019.

Author: David C. Planchard, CSWP and SolidWorks Accredited Educator
SDC Publications
ISBN: 978-1-63057-232-7

3) REQUIRED: Analysis of Machine Elements Using SOLIDWORKS Simulation 2019.

Authors: Shahin S. Nudehi Ph.D, John R. Steffen Ph.D., P.E.
SDC Publications
ISBN: 978-1-63057-234-1

4) RECOMMENDED: Introduction to Finite Element Analysis Using SOLIDWORKS Simulation 2019.

Author: Randy H. Shih
SDC Publications
ISBN: 978-1-63057-235-8

5) RECOMMENDED: Engineering Design with SOLIDWORKS 2019.

Author: David C. Planchard, CSWP and SolidWorks Accredited Educator
SDC Publications
ISBN-13: 978-1-63057-223-5
ISBN-10: 1-63057-223-3

Other technology requirements / equipment / material:

A key code and instructions to download SolidWorks 2019 Educational Version will be posted on CANVAS.

Dropping and Adding: Students are responsible for understanding the policies and procedures about add/drop. Deadlines can be found on the current academic calendar.

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 at <http://www.sjsu.edu/advising>.

Course Requirements:

The expectation for the course is that students will spend at least 3 hours per unit per week for a total of 9 hours per week on this 3-unit course.

Final Examination or Evaluation:

Grading Information (Required)

Homework:

Exams:

Grading:	Homework	40%
	Exam 1- Curved CSWA Score	20%
	Exam 2- Curved CSWA-S/FEA Score	20%
	Final Exam- Replaces lowest exam grade	20%
	Total	100%
	Extra Credit	0-5%

Grading scale:	A	=	93.0 – 100
	A-	=	90.0 – 92.9
	B+	=	87.0 – 89.9
	B	=	83.0 - 86.9
	B-	=	80.0-82.9
	C+	=	77.0-79.9
	C	=	73.0-76.9
	C-	=	70.0-72.9
	D+	=	67.0-69.9
	D	=	63.0-66.9
	D-	=	60.0-62.9
	F	=	0 - 59.9

“This course must be passed with a **C-** or better as an **SJSU** graduation requirement.”

Classroom Protocol

This class will require active student participation with frequent stand-up presentations to mimic a typical work environment. Please let the professor know in advance (excused absence) if you will not be able to attend.

Tests, homework, and project work missed because of an unexcused absence receive a grade of 0. No exceptions.

Students are expected to uphold the Student Code of Conduct, Academic Honor Code published in the University Bulletin and/or Student Handbook.

Students caught cheating on an exam or quiz will receive an “F” for the class and the incident will be reported to the department chair for possible further action.

ME 165 / Design for Manufacturability, Spring 2020, Course Schedule

The Course Schedule may change – changes will be announced during lecture time

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1		Introduction to ME165, review the Syllabus, get to know each other.
	1/23/20	Download and install SolidWorks 2019 Educational Version to your laptop. HW 1 - Review Software Tutorials: Introduction, Lessons 1, 2, and 3.
2	1/28/20	HW 2 Level I Text – Chapter 2: Part Modeling. Prerequisites: ME 020, CE 112, ME 130 or MATH 129A – please provide an unofficial transcript with the prerequisites
	1/30/20	
3	2/04/20	HW 3 Level I Text – Chapter 3: Special Features; Sweep, Loft and Wrap.
	2/06/20	
4	2/11/20	HW 4 Level I Text – Chapter 4: Detailed Drawings.
	2/13/20	
5	2/18/20	HW 5 Level I Text – Chapter 5: Assembly Modeling.
	2/20/20	
6	2/25/20	HW 6 Level I Text – Chapter 6: Assembly and Design Table Drawings.
	2/27/20	
7	3/03/20	HW7 – CSWA Review Text – Chapter 2: CSWA Introduction and Drafting Competencies. Chapter 3 – Basic Part and Intermediate Part Creation and Modification
	3/05/20	
8	3/10/20	HW8 – CSWA Review Text – Chapter 4: Advanced Part Creation and Modification. Chapter 5: Assembly Creation and Modification. Tangix Tester Pro Download and Install (Personal Computer). HW9 – CSWA Sample Exam (Using TangixTesterPro application) Review for Exam 1 – Parts, Drawings and Assemblies.
	3/12/20	
9	3/17/20	Exam 1 – Curved CSWA Exam Score (3 hours). Exam 1 Grade curved based upon the person receiving the Highest Score HW10- SW Simulation- Level I Text – Chapter 8
	3/19/20	
10	3/24/20	HW11- SW Simulation 2 – SW Tutorials 2
	3/26/20	
	3/31/20	Spring Recess
	4/02/20	
11	4/07/20	HW12 - SW Simulation 3
	4/09/20	

Week	Date	Topics, Readings, Assignments, Deadlines
12	4/14/20	HW13 - SW Simulation 4
	4/16/20	HW13 - SW Simulation 4
13	4/21/20	HW14 - SW Simulation 5 – CSWA Review Text – Chapter 7: Certified SolidWorks Simulation Associate - Finite Element Analysis (CSWA-FEA) Exam Review for Exam 2 – SW Simulation/FEA Focus
	4/23/20	
14	4/28/20	Exam 2 = Curved CSWA – Simulation/FEA Exam Score (2 hours)
	4/30/20	Exam 2 Grade curved based upon the person receiving the highest Score HW15 – SW Advanced Skills Info
15	5/05/20	HW 16 -SW Simulation Extra
	5/07/20	All extra credit due – Review for Final Exam
Final Exam	To be determined	