

San José State University
Mechanical Engineering Department

ME 180 Section 05
(2-units)

Advanced Computer-Aided Design in Mechanical Engineering
Spring 2019

Course and Contact Information

Instructor: Dr. Susan M. Bowley
Office Location: E 348
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Email: susan.bowley@sjsu.edu
Office Hours: Online Sundays 10-11am;
Anytime via email (preferred);
By Appointment

Class Days/Time: Online and Two (2) Required On-Campus Meetings and One (1) Optional On-Campus Meeting:
Section 05: Tuesdays, 1:30-4:15pm, E213

Classroom (Canvas): Section 05: <https://sjsu.instructure.com/courses/1316459>

Prerequisites*: CSWA Certification

*** You must turn in the prerequisites highlighted by the date specified in Canvas, or you will be dropped from the class.**

Course Format – Technology Intensive, Hybrid, and Online Courses

This is an online class with selected on-campus class meetings. You must have reliable Internet connectivity, a Windows-based computer (running Windows 7 or later), a downloaded copy of SolidWorks 2018 (key provided via Canvas), and all required textbooks (print or eBook) in order to participate and successfully pass this course. All course material developed by your instructor is the intellectual property of the instructor and is to be used for private, study purposes only, and cannot be shared publicly or uploaded without the instructor's approval. All exams are given on-campus only. One (1) optional on-campus exam for SolidWorks Certification is scheduled and your instructor will be present (see the Tentative Course Schedule at the end).

Canvas Course Website

All materials for this course will be available inside the Canvas course website noted above. These materials will include: Syllabus, Assignments, Handouts, Videos, and Course Notes. You are responsible for regularly checking for due dates of Assignments and Course Materials through the Canvas course website.

Course Description

Advanced three-dimensional modeling and design techniques utilizing commercially available Computer-Aided Design (CAD) software. Competency-based online learning environment and commercial certification/credential options offered.

Prerequisite: CSWA Certification. Recommended: ME 165 with a grade of B or higher and 2 years of SolidWorks experience.

Course Goals and Course Learning Outcomes (CLO)

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

1. Demonstrate advanced proficiency in creating complex computer-aided design models for mechanical engineering parts, drawings, and assemblies, using modern commercial CAD software.

Required Texts/Readings

Textbooks

1. REQUIRED - [SOLIDWORKS 2018 Advanced Techniques Mastering Parts, Surfaces, Sheet Metal, SimulationXpress, Top-Down Assemblies, Core & Cavity Molds](#), By Paul Tran CSWE, CSWI

Net Price: \$39.00

Published October 25, 2017

752 Pages

Binding: Paperback

Printing: Black and White

Print ISBN: 978-1-63057-160-3 | ISBN 10: 1630571601

eBook ISBN: 978-1-63056-402-5

2. REQUIRED - [Official Certified SOLIDWORKS Professional Certification Guide SOLIDWORKS 2015 – 2017](#) By David C. Planchard CSWP

Net Price: \$35.00

Published May 12, 2017

192 Pages

Binding: Paperback

Printing: Black and White

Print ISBN: 978-1-63057-071-2 | ISBN 10: 1630570710

eBook ISBN: 978-1-63056-361-5

Other technology requirements / equipment / material

A key code and instructions to download the 2018 Educational Version of SolidWorks will be provided to all students registered in the Canvas course. You must have this version to complete exercises for this class.

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 calendar](http://www.sjsu.edu/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/>.

Course Requirements and Assignments

Course Assignments are provided through the Canvas course site. All materials are directly aligned with course learning outcomes noted above. The Detailed Course Schedule noted below indicates materials to be covered.

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 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 practica. Other course structures will have equivalent workload expectations as described in the syllabus. **Therefore, you should plan to spend at least 6 hours per week on this 2-unit course.**

Final Examination or Evaluation

Final Exam will be administered On-Campus and take place during the week of May 15-22, 2019.

Grading Information

Homework	70%
Final Exam	30%
TOTAL	100%
Extra Credit	0-5%

Grading Policy:

A	from 100% to 94%	A-	from 93% to 90%		
B+	from 89% to 87%	B	from 86% to 84%	B-	from 83% to 80%
C+	from 79% to 77%	C	from 76% to 74%	C-	from 73% to 70%
D+	from 69% to 67%	D	from 66% to 64%	D-	from 63% to 60%
F	below 60%				

This course must be passed with a C- or better as a CSU graduation requirement.

On-Campus Meetings, Homework, Exams, and Extra Credit:

- 1. Mandatory On-Campus Meetings:** The First Class meeting and the Final Exam are the only two (2) required On-Campus Meetings. If you do not attend the First Class meeting (or you are late), you will be dropped from the course.
- 2. Optional On-Campus Meetings:** There will be one (1) optional On-Campus meeting where you will be allowed to take the CSWP (Certified SolidWorks Professional) Exam. In order to take this Exam, you must have already passed the CSWA (Certified SolidWorks Associate) Exam and proof must be provided to your instructor via Canvas.

3. **Homework:** Homework will be assigned each week and due dates will be announced on Canvas. **Reduced points may be earned for late homework submissions for up to 1-week after the due date has passed.**
4. **Final Exam:** **The Final Exam will be cumulative and occur On-Campus.** If you do not pass the optional CSWP Exam you must take the Final Exam. If you do not pass the optional CSWP Exam and if you do not attend the Final Exam you will receive a zero on the Final.
5. **Extra Credit:** Assigned during the semester at instructor's discretion. **All Extra Credit assignments will be due as indicated in Canvas.**
6. **Optional CSWP (Certified SolidWorks Professional) Exam (3.5 hours): Optional On-campus Proctored Exam. If you attempt and PASS the CSWP Exam, your Final Exam grade will be 100% (and you will not need to take the Final Exam).**
7. The only way to learn is through practice, so make time to complete your homework regularly and on time.
8. **Submissions will be through the Canvas website and must have your Initials_Assignment_Date.ZIP format for all submissions. Be sure the file name is NOT excessively long otherwise it cannot be reviewed.**
9. **No makeup exams or final exams will be given except for emergency situations.**

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

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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Tentative Course Schedule
Subject to Change via Canvas course website

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/29/19	<ul style="list-style-type: none"> • First Class – Mandatory On-Campus Meeting • Advanced Techniques Text – Introduction to Course and Warm-up Tutorials • Advanced Techniques Text – Chapter 1: Introduction to 3D Sketch
2	2/4/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 2: Advanced Plane Creation
3	2/11/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 3: Advanced Modeling
4	2/18/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 4: Sweep with Composite Curves
5	2/25/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 5: Advanced Modeling with Sweep & Loft
6	3/4/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 6: Loft vs. Sweep; Chapter 7: Loft with Guide Curves
7	3/11/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 8: Using Surfaces; Chapter 9: Advanced Surfaces
8	3/18/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapter 10: Using Filled Surfaces; Chapter 11: Surfaces vs. Solid Modeling
9	3/25/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapters 13-16: Sheet Metal Topics: Parts, Forming Tools, Conversions, STEP files
4/1/19 to 4/5/19 – SPRING BREAK – NO CLASS		
10	4/8/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapters 17 & 18: Mold Tools Design Topics: Creating a Core and Cavity, Non-Planar Parting Lines
11	4/15/19	<ul style="list-style-type: none"> • Advanced Techniques Text – Chapters 19 & 20: Top-Down Assembly: Part 1, and Part 2
12	4/22/19	<ul style="list-style-type: none"> • CSWP Certification Guide Text – Review Segment 1 of the CSWP CORE Exam
13	4/29/19	<ul style="list-style-type: none"> • CSWP Certification Guide Text – Review Segment 2 of the CSWP CORE Exam
14	5/6/19	<ul style="list-style-type: none"> • CSWP Certification Guide Text – Review Segment 3 of the CSWP CORE Exam • Advanced Techniques Text – CSWP Core Preparation Practice
15	5/14/19	<ul style="list-style-type: none"> • Optional On-Campus Meeting: CSWP Exam (3.5 hours), Pass Replaces Final Exam as 100% • Review for Final Exam
Final Exam	Finals 5/15-5/22: Mandatory On-Campus Meeting if you did NOT pass CSWP Exam	