

ENGR 4421-130, 80605, Solid Modeling

Fall 2022

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

16-week class, 08/22/22 – 12/09/22

Weekly classes are Tuesdays 2:00 pm -4:45 pm and Labs on Thursdays 2:00 pm – 5:00 pm at Heritage Hall Building, Room 308. *Classes will focus on problem-solving. Students are expected to already be familiar with the material BEFORE class by referring to the supplemental textbook.*

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Sam Jackson

Office: 302D Heritage Hall

Email: sam.jackson@tamuct.edu

Office Hours

I will be available for students on an appointment-basis, please send me an email to set an appointment.

Student-instructor interaction

The instructor will reply to the students' emails within 24 hours. The students need to make an appointment with the instructor if the student need to meet the Instructor during the office hours

Emergency Warning System for Texas A&M University-Central Texas

SAFEZONE. SafeZone provides a public safety application that gives you the ability to call for help with the push of a button. It also provides Texas A&M University-Central Texas the ability to communicate emergency information quickly via push notifications, email, and text messages. All students automatically receive email and text messages via their myCT accounts.

Downloading SafeZone allows access to push notifications and enables you to connect directly for help through the app.

You can download SafeZone from the app store and use your myCT credentials to log in. If you would like more information, you can visit the [SafeZone](http://www.safezoneapp.com) website [www.safezoneapp.com].

To register SafeZone on your phone, please follow these 3 easy steps:

1. Download the SafeZone App from your phone store using the link below:
 - [iPhone/iPad](https://apps.apple.com/app/safezone/id533054756): [https://apps.apple.com/app/safezone/id533054756]
 - [Android Phone / Tablet](https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp)
[https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp]
2. Launch the app and enter your myCT email address (e.g. {name}@tamuct.edu)
3. Complete your profile and accept the terms of service

For updates on COVID information, please monitor the University [website](https://www.tamuct.edu/covid19/)
[<https://www.tamuct.edu/covid19/>]

The course may go to 100% online if the campus is closed

COURSE INFORMATION

Course Overview and description

A study of the development and application of solid models of components and assemblies in engineering design and analysis. The course covers the use of solid models in problems related to component design, stress analysis, fluid flow, heat transfer, machine dynamics, and assembly interference. Students will produce engineering drawings, visual representations, and data files for machining and rapid prototyping taking into account the accuracy and validity considerations of solid models.

Course Objective or Goal

Student Learning Outcomes

1. Identify, analyze, and solve broadly-defined engineering technology problems
2. Apply the knowledge, techniques, skills, and modern tools of the discipline
3. Adapt to emerging applications of mathematics, science, engineering, and technology
4. Design, develop, implement, operate, and maintain mechanical systems
5. Improve processes by conducting, analyzing, and interpreting experiments using standard tests and measurements
6. Apply written, oral, and graphical communication in both technical and non-technical environments
7. Collaborate with others as a member or leader in an engineering team.

Required Reading and Textbook(s)

- SolidWorks Software.

Supplemental Text

- Beginner's Guide to Solidworks 2020 Level I by Alejandro Reyes MSME, CSWE, CSWI

COURSE REQUIREMENTS

Course Requirements: (include point values for each- not just a percentage)

- Homework 40 points.(SLO 1-4)
- Projects 60 points. There are 2 Projects of weight 30 points each. (The Projects are Proctored during the class time) (SLO 1-4)

PROJECTS

Two large **Projects** will be conducted during the semester

Project 1 Parts design (30 weighted pts);

The Instructor will assign a part to design using the tools that the students learn from the first 8 weeks of class. The student has to design the part using the SolidWork

software and do a presentation about the tools that the student used to design the part. The presentation will be 10 minutes during the class time. The project will be graded up to 100 pts and then scaled to the 30 pt weight. Grading will be according to the rubric at the end of the syllabus.

Project 2 Assemble parts (30 weighted pts)

The Instructor will assign at least three parts to design using the tools that the students learn from the 14 weeks of class then assemble them together. The student has to design the parts and assemble them using the SolidWork software and do a final presentation about the tools that the student used in the project. The presentation will be 15 minutes during the class time. The project will be graded up to 100 pts and then scaled to the 30 pt weight. Grading will be according to the rubric at the end of the syllabus.

Grading Criteria Rubric and Conversion

Homework	40% (40 points)	90- 100%= A
Project 1	30% (30 points)	80- 89%= B
Project 2	30% (30 points)	70- 79%= C
		60- 69%= D
TOTAL	100% (100 points)	Below 60 % F

Posting of Grades

Combined grades will be posted on TAMUCT Canvas after each Project.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

Week # T, R)	New Material
#1 Aug 23, 25	Chapter 1
#2 Aug 30, Sep 1	Chapter 1
#3 Sep 6, 8	Chapter 2
#4 Sep 13, 15	Chapter 2 and 3
#5 Sep 20, 22	Chapter 3
#6 Sep 27, 29	Chapter 4
#7 Oct 4, 6	Chapter 5
#8 Oct 11, 13	Chapter 5
#9 Oct 18, 20	Project 1
#10 Oct 25, 27	Chapter 6
#11 Nov 1, 3	Chapter 7
#12 Nov 8, 10	Chapter 7
#13 Nov 15, 17	Chapter 8
#14 Nov 22	Chapter 8
#15 Nov 29,	TBD

Dec 1	
#16 Dec 6	Project 2

Important University Dates

see <https://www.tamuct.edu/registrar/academic-calendar.html>

TECHNOLOGY REQUIREMENTS AND SUPPORT

The students need SolidWorks Software.

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system.

We strongly recommend the latest versions of Chrome or Firefox browsers. Canvas no longer supports any version of Internet Explorer.

Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com/>] or access Canvas through the TAMUCT Online link in myCT [<https://tamuct.onecampus.com/>]. You will log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

Online Proctored Testing

A&M-Central Texas uses Proctorio for online identity verification and proctored testing. This service is provided at no direct cost to students. If the course requires identity verification or proctored testing, the technology requirements are: Any computer meeting the minimum computing requirements, plus web camera, speaker, and microphone (or headset). Proctorio also requires the Chrome web browser with their custom plug in.

Other Technology Support

For log-in problems, students should contact Help Desk Central, 24 hours a day, 7 days a week

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [<http://hdc.tamu.edu>]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Academic Accommodations

At Texas A&M University-Central Texas, we value an inclusive learning environment where

every student has an equal chance to succeed and has the right to a barrier-free education. The Warrior Center for Student Success, Equity and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information, please visit our [Access & Inclusion](https://tamuct.instructure.com/courses/717) Canvas page (log-in required) [https://tamuct.instructure.com/courses/717]

Academic Integrity

Texas A&M University-Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. All academic misconduct concerns will be referred to the Office of Student Conduct. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more [information regarding the student conduct process](https://www.tamuct.edu/student-affairs/student-conduct.html), [https://www.tamuct.edu/student-affairs/student-conduct.html].

If you know of potential honor violations by other students, you may [submit a referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0), [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0].

Drop Policy

If you discover that you need to drop this class, you must complete the [Drop Request](#) Dynamic Form through Warrior Web.

[https://federation.ngwebsolutions.com/sp/startSSO.ping?PartnerIdId=https://eis-prod.ec.tamuct.edu:443/samlssso&SpSessionAuthnAdapterId=tamuctDF&TargetResource=https%3a%2f%2fdynamicforms.ngwebsolutions.com%2fSubmit%2fStart%2f53b8369e-0502-4f36-be43-f02a4202f612].

Faculty cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant, experiencing pregnancy-related conditions, and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of

Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit [Student Affairs](https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html) [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf) online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring

Tutoring is available to all A&M-Central Texas students, both virtually and in-person. Student success coaching is available online upon request.

If you have a question, are interested in becoming a tutor, or in need of success coaching contact the Warrior Center for Student Success, Equity and Inclusion at (254) 501-5836, visit the Warrior Center at 212 Warrior Hall, or by emailing WarriorCenter@tamuct.edu.

To schedule tutoring sessions and view tutor availability, please visit [Tutor Matching Services](https://tutormatchingservice.com/TAMUCT) [https://tutormatchingservice.com/TAMUCT] or visit the Tutoring Center in 111 Warrior Hall.

Chat live with a remote tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas except writing support. Access Tutor.com through Canvas.

University Library & Archives

The University Library & Archives provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 400,000 eBooks and 82,000 journals, in addition to the 96,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place virtually through WebEx, Microsoft Teams or in-person at the library. [Schedule an appointment here](https://tamuct.libcal.com/appointments/?g=6956) [https://tamuct.libcal.com/appointments/?g=6956]. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to

piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index]

University Writing Center

University Writing Center: Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (A&M–Central Texas) is a free service open to all A&M–Central Texas students. The hours of operation are from 10:00 a.m.-5:00 p.m. Monday thru Thursday in Warrior Hall 416 (with online tutoring available every hour as well) with satellite hours available online only Monday thru Thursday from 6:00-9:00 p.m. and Saturday 12:00-3:00 p.m.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WiFi, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by making an appointment via [WCOonline](https://tamuct.mywconline.com/) [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC, need any assistance with scheduling, or would like to schedule a recurring appointment with your favorite tutor.

OPTIONAL POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Wellness and Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and

victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](https://www.tamuct.edu/compliance/titleix.html) [https://www.tamuct.edu/compliance/titleix.html].

Behavioral Intervention

Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the [referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2) online

[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/bit) website for more information [https://www.tamuct.edu/bit]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5805.

OTHER POLICIES

Copyright Notice

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

Projects Rubric

Category	Excellent (A) 95%	Good (B) 85%	Fair (C) 75%	Poor (D) 65%	Fail (F) 0%
Title (5%)	Clearly describes the content of the Design.	Describes the content but the usage of descriptive words is not appropriate	The content is not clearly described. Fair use of descriptive words	No title. Poor description or poor use of descriptive words.	No submission/No effort exhibited
2D CAD Design (25%)	Perfect 2D CAD Design	Minor procedural error	Missing no more than one view on the 2D Design	Major conceptual or procedural error.	No submission/No effort exhibited
Dimensions (20%)	Perfect Dimensioning	Error within 1% - 10% in Dimensioning	Error within 11% - 20% in Dimensioning	Error more than 20% in Dimensioning	No submission/No effort exhibited
Presentation (10%)	Effectively uses eye contact. Speaks clearly, effectively and confidently using suitable volume and pace. Fully engages the audience. Selects rich and varied words for context and uses correct grammar.	Maintains eye contact. Speaks clearly and uses suitable volume and pace. Takes steps to engage the audience. Dresses appropriately. Selects words appropriate for context and uses correct grammar.	Some eye contact, but not maintained. Speaks clearly and unclearly in different portions. Occasionally engages audience. Dresses inappropriately. Selects words inappropriate for context; uses incorrect grammar.	Poor eye contact. Not audible and uses unsuitable pace. No audience engagement. Uses incorrect words or grammar	No submission/No effort exhibited
Final 3D Design (40%)	Perfect.	Minor careless or technical mistakes	Makes beginning steps towards the final design	Some relevant information supplied	No submission/No effort exhibited

