

**ENGT 4326, 10732, Senior Design B  
Spring 2021**

Texas A&M University-Central Texas

**COURSE DATES, MODALITY, AND LOCATION**

This is a Synchronous Distributed Course that meets from Jan 19 – May 14

**For lecture on W from 11:00 am – 1:45 pm**

**Online via Webex (meeting links in the WebEx Meeting tab in Canvas)**

**with team meeting/work sessions**

**in WH413 based on pandemic conditions**

Supplemental materials will also be made available online through the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com/>]

**INSTRUCTOR AND CONTACT INFORMATION**

**Instructor: Dr. Taylor Harvey**

**Office: Heritage Hall 302L**

**Phone: 254-519-5414**

**Email: [tharvey@tamuct.edu](mailto:tharvey@tamuct.edu) (prefer direct email)**

**Office Hours**

W 10 – 10:45 am via Webex (<https://tamuct.webex.com/meet/tharvey>)

Available by appointment at other times. Really, just email me!

**Student-instructor interaction**

You are strongly encouraged to communicate with me. If you get stuck on a concept or homework problem, **do not** wait until office hours. Send me an email that includes screenshot or photo of the problem and I can provide guidance. I will reply to any email within 48 hours during the work week or on Monday after a weekend (but probably a lot sooner in both cases). If you need more help, send me an email and schedule a webex session (<https://tamuct.webex.com/meet/tharvey>).

**WARRIOR SHIELD**

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

Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) [https://portal.publicsafetycloud.net/Account/Login] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

## **COVID-19 SAFETY MEASURES**

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University-Central Texas has adopted policies and practices to minimize virus transmission. All members of the university community are expected to adhere to these measures to ensure their own safety and the safety of others. Students must observe the following practices while participating in face-to-face courses, course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.) and co-curricular programs:

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction. Students required to quarantine must participate in courses and course-related activities remotely and must not attend face-to-face course activities. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.
- Face Coverings— Face coverings must be worn inside of buildings and within 50 feet of building entrances on the A&M-Central Texas Campus. This includes lobbies, restrooms, hallways, elevators, classrooms, laboratories, conference rooms, break rooms, non-private office spaces, and other shared spaces. Face coverings are also required in outdoor spaces where physical distancing is not maintained. The university will evaluate exceptions to this requirement on a case by case basis. Students can request an exception through the Office of Access and Inclusion in Student Affairs.
  - If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Office of Student Conduct. Additionally, the faculty member may choose to teach that day's class remotely for all students.
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in the course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- The university will notify students in the event that the COVID-19 situation necessitates changes to the course schedule or modality.

## COURSE INFORMATION

### Course Overview and description

This course covers the formulation, construction, and fabrication work by teaching students how to refine, experiment, and test models while considering alternatives. Students will analyze results, prepare and submit design documents including a project report.

### Student Learning Outcomes

1. Solve a specific design challenge of a real-world industry problem and then conceptualize novel solutions to such industry problem
2. Communicate effectively in written, oral, and visual formats
3. Work effectively as a team, at the module/unit level, as well

### Required Reading and Textbook(s)

No required textbook

## COURSE REQUIREMENTS

The course will involve homework, status reports, a draft technical project report, and final technical project report.

**Homework** (20 weighted pts in total) will be assigned throughout the semester (SLO 1-3). Homework will most often be a section of the technical report.

Weekly **Status Reports** (20 weighted pts in total) will be required. (SLO 1-3) Status reports should include the following information:

Item	Pts
Project Title, Team Members, Executive Summary (static)	1
Planned Schedule and current status	2
Accomplishments since last status update	2
Issues (Technical, Schedule, Budget) Purchasing Status (if applicable)	2
Risk Update	1
Plans until next status update	2

A **draft** (20 weighted points) and **final Technical Report** (40 weighted points) for the technical project will be required. Students will communicate the results of the project in this report. The report will be graded out of 100 pts and then scaled to the appropriate weight. Grading for the technical report will be according to the report rubric at the end of the syllabus. The report can utilize any style guide, but must be formatted and referenced. (SLO 1-3)

## Grading Criteria Rubric and Conversion

Activity	Points	% of Final Grade
Homework	20	20
Status Reports	20	20
Draft Technical Report	20	20
Final Technical Report	40	40

Course Grades will be assigned by the following scale based on weighted grade percentage:

Grade	Weighted Grade (%)
A	$\geq 90.00$
B	80.00 - 89.99
C	70.00 - 79.99
D	60.00 - 69.99
F	$< 60.00$

### Posting of Grades

All turned in work will be graded within 2 weeks and results posted on Canvas.

### Course Policies

#### *Webex Participation*

Students are encouraged to participate during Webex sessions. Participation includes leaving videos feed on and unmuting mics often to ask or respond to questions.

#### *Late Work*

Assignments, status reports, or projects that are late will have a 10% deduction for each calendar day the project is turned in late (90% maximum score for a project turned in 1 day late, 80% for 2 days late, etc.), but no submissions will be accepted greater than 5 days late. Scores for late projects will be determined using this formula:

'Grade Recorded' = 'Grade Earned if not late' \* 'maximum percent based on days late'.

#### *Plagiarism*

It is the responsibility of the student to understand plagiarism and avoid it completely. Contact me if you have any questions about what constitutes plagiarism. Any assignment deemed to be plagiarized by the instructor will receive a zero, even if the plagiarism is the result of a misunderstanding or ignorance. A second plagiarism offense will lead to a failing grade in the course.

#### *Appeals*

If the student wishes to appeal a grade, they must do so within 1 week of receiving the graded paper. Students should save all their work to ensure that no clerical errors are made in grade reporting.

## Lab Safety

Students must comply with laboratory safety regulations. In particular, the student must wear safety goggles and apron while working in the laboratory. Each lab period, students found not wearing safety goggles over their eyes will be given one warning. Students found not wearing their safety goggles a second time during that lab period will be dismissed from lab immediately. Students will not be permitted to wear shorts, short skirts, short dresses, or sandals in the lab. All attire must come down to the ankles. Do not wear baggy clothing. Tank tops and halter tops are not permitted in lab. Shoulders and entire back must be covered. Only closed toe and closed heel shoes are allowed in the laboratory. The shoe must cover the entire foot.

No food or drink is permitted in the lab.

## COURSE OUTLINE AND CALENDAR

### Complete Course Calendar

Course schedule will be determined by the needs of the technical project. Each week's lecture session location (Webex or WH413) will be announced by Monday. A status report will be given to begin each lecture, followed by a lecture/review on a project pertinent topic. The bulk of each session will be a work session for the team to advance the project.

ENGT 4326: Tentative Schedule	
Week/Dates	Lecture Topics
1- Jan 20	Introduction
2- Jan 27	Design of Experiment
3- Feb 3	Project Work
4- Feb 10	Fluid Transport
5- Feb 17	Project Work
6- Feb 24	Heat Transfer
7- Mar 3	Project Work
8- Mar 10	Project Work
9- Mar 17	Spring Break - No Class
10- Mar 24	Technical Topic Exploration
11- Mar 31	Project Work
12- Apr 7	Technical Draft Due
13- Apr 14	Project Work
14- Apr 21	Report Writing
15- Apr 28	Project Work
16- May 5	Project Work
17- May 12	Technical Report Due

### Important University Dates

See the Academic Calendar: <https://www.tamuct.edu/registrar/academic-calendar.html>

## TECHNOLOGY REQUIREMENTS AND SUPPORT

Computer access will be needed to attend lectures and complete homework and projects.

### 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](mailto: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.*

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## UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

### Drop Policy

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

[<https://dynamicforms.ngwebsolutions.com/casAuthentication.ashx?InstID=eaed95b9-f2be-45f3-a37d->

46928168bc10&targetUrl=https%3A%2F%2Fdynamicforms.ngwebsolutions.com%2FSubmit%2FForm%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.

### **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. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, working with others in an unauthorized manner, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be referred to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. 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 report](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0),  
[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout\_id=0].

### **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 Office of Access 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](#) Canvas page (log-in required)

[<https://tamuct.instructure.com/courses/717>]

### **Important information for Pregnant and/or Parenting Students**

Texas A&M University-Central Texas supports students who are pregnant 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/index.html) [https://www.tamuct.edu/student-affairs/index.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, on a remote online basis. Visit the Academic Support Community in Canvas to view schedules and contact information. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Student success coaching is available online upon request.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, success coaching, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing [studentsuccess@tamuct.edu](mailto:studentsuccess@tamuct.edu) .

Chat live with a 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 Writing Center**

The University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free service open to all TAMUCT students. For the Spring 2021 semester, all services will be online as a result of the COVID-19 pandemic. The hours of operation are from 10:00 a.m.-5:00 p.m. Monday thru Thursday with satellite hours Monday thru Thursday from 6:00-9:00 p.m. The

UWC is also offering hours from 12:00-3:00 p.m. on Saturdays.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. 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. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. 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](mailto:bruce.bowles@tamuct.edu) if you have any questions about the UWC and/or need any assistance with scheduling.

### **University Library**

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 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 on Skype or in-person at the library. 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].

**For Spring 2021, all reference service will be conducted virtually. Please go to our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index] to access our virtual reference help and our current hours.**

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### **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 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/student-affairs/bat.html) website for more information [https://www.tamuct.edu/student-affairs/bat.html]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.

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### **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.

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[tharvey@tamuct.edu](mailto:tharvey@tamuct.edu)

Category	Excellent (A) 95%	Good (B) 85%	Fair (C) 75%	Poor (D) 65%	Fail (F) 0%
Cover Sheet, Overview, and Recommendations (8%)	Cover Sheet included with title of report, team members, course info, and date. Overview clearly describes the content of the report with a clear indication of results. Strong and well thought out recommendations given. Provides key words and phrases.	Cover Sheet has all needed information. Overview describes the content of the proposal and give an adequate indication of results. Recommendations reasonable.	Cover Sheet missing information. Overview refers to, but do not describe, content of the report.	No Cover Sheet. Overview omits key content of the report.	No submission /No effort exhibited
	Comments:				Score:
Proposal Review (12%)	Appropriate review of key proposal aspects with a focus on problem and solution specifications. Changes of scope reasonable and noted and explained. Budget clearly reported.	Key proposal aspects reviewed. Changes in scope and budget reported.	Some proposal aspects not reviewed. No discussion of changes in scope or budget.	Poor review of proposal with missing aspects	No submission /No effort exhibited
	Comments:				Score:
Design Specifications (25%)	Describes the design clearly and with appropriate depth. Fully explains how solution met technical design specifications and requirements. Outcome is in line with proposal (or better) and of high quality. High quality figures clearly illustrate the design. Details included in the appendices as appropriate.	Solution described with appropriate depth. Technical design specifications meet requirements and are well done. Figures help with understanding of design. Appropriate details in appendix.	Weakly communicated, partial solution given. Figures poorly put together and unhelpful.	Poorly described solution and specifications. Missing details and no supporting appendix.	No submission /No effort exhibited
	Comments:				Score:

<b>Deliverables (20%)</b>	All deliverables from the proposal are included and are of high-quality. Any changes in deliverables discussed.	All deliverables from the proposal are included. Any changes in deliverables discussed.	Most proposal deliverables included with changes discussed.	Significant missing deliverables. No discussion of changes.	No submission /No effort exhibited
	Comments:				Score:
<b>Wrap Up (12%)</b>	Report includes a thorough discussion of lessons learned, conclusions, and future potential work. These sections are well supported by the entirety of the report.	Report includes a discussion of lessons learned, conclusions, and future potential work that are supported by the report.	Report includes a partial discussion of lessons learned, conclusions, and future potential work.	Missing wrap up sections or sections unrelated to the rest of the report.	No submission /No effort exhibited
	Comments:				Score:
<b>Bibliography and Appendices (3%)</b>	Provides a complete list of references used in the proposal using a citation style (i.e. APA, MLA). Any additional documents needed to support the report included in an appendix.	Most references are provided. Some inconsistency in the style used is evident.	Misses several references or does not adhere to the correct style. Missing needed appendices.	Most references are not included and/or the style used is incorrect. No appendices.	No submission /No effort exhibited
	Comments:				Score:
<b>Report format and quality (20%)</b>	Report is presented in an orderly and logical way. Format is very clean with no grammatical issues. High-quality illustrative materials (Tables and Figures) to support proposal.	Orderly and logical structure. Minor errors in format and grammar. Figures and tables are adequate to support proposals.	Poor structure with errors in format and grammar. Figures do not support proposal.	Poor structure with errors in format and grammar. No figures.	No submission /No effort exhibited
	Comments:				Score:
<b>Final Score</b>					