

ENGT 3312-110, 10316, Heat Transfer

Spring 2022

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

16-week course, 18 Jan – 13 May

This is a 100% online course. Weekly classes will be held online via Webex MW 8-9:15 am. Lectures will be recorded and posted to the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com/>]. Students will complete homework, quizzes, and exams using the McGraw-Hill Connect learning software.

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Ryan Mullen

Email: ryangmullen@tamuct.edu

Office Hour: Th 2-3 pm, via Webex

Student-instructor interaction

In addition to class time and the office hour, I am available to meet via Webex by appointment. Please email me with two suggested times you can meet and I will pick the one that works best with my schedule. You can expect an email response within approximately 24 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

COURSE INFORMATION

Course Overview and description

The theory and application of heat transfer in engineering applications will be studied. Topics include steady and unsteady conduction in one- and two-dimensions, forced convection, internal and external flows, heat exchangers, radiation, and elements of thermal system design.

Student Learning Outcomes

Students will learn to compute quantities associated with:

1. heat transfer via steady-state conduction in one and two dimensions.
2. transient heat transfer via conduction.
3. heat transfer via forced and free convection.
4. heat transfer in heat exchangers.
5. radiative heat transfer.

Required Reading and Textbook(s)

Heat and Mass transfer (6th Edition) by Yunus Cengel, Afshin J. Ghajar

COURSE REQUIREMENTS

This course will involve quizzes, homework, and exams.

Quizzes (SLO 1-5)

There is one quiz each week. Quizzes will be graded for credit.

Homework (SLO 1-5)

There is one homework assignment each week. Homework problems will be graded for credit.

Exams (SLO 1-5)

There will be three exams. Each exam will be comprehensive. The exam will be open for approximately one week, so you may take it at any time during those days. The specific days that the exam will be open is specified on the course schedule. I will provide additional details about the exam format during the in-class review before each exam.

Grading Criteria Rubric and Conversion

Activity	Points	% of Final Grade
Homework	120	12
Quizzes	220	22
Exams	660	66

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

Grade	Weighted Grade (%)
A	≥ 90.0
B	80.0 - 89.9
C	70.0 - 79.9
D	60.0 - 69.9
F	< 60.0

Posting of Grades

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

Grading Policies

Late Work

Late work will not be excepted without prior approval. You must plan your time well in order to turn things in on time. If there are extenuating circumstances, an individual extension may be granted after speaking with the instructor.

Missed Exams

If you cannot make an exam session, you **must** schedule an alternative period beforehand.

Missed exams should be taken before the scheduled time, within one week of the actual exam.

Appeals

If the student wishes to appeal a grade, they must do so within 1 week of receiving the graded paper.

Plagiarism/Cheating

All submitted work must be your own. Turning in an assignment that is identical to one submitted by another student is academic dishonesty. Any student found to be cheating and/or having plagiarized will receive an immediate failing grade and be referred to the office of student conduct. More info below under academic integrity.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

A tentative schedule is shown below. This schedule may be changed at the discretion of the instructor.

Week	Dates	Topics	Assignment Due
1	Jan 19	No class Ch 1: Introduction & Basic Concepts (SLO 1-5)	
2	Jan 24 Jan 26	Ch 1: Introduction & Basic Concepts (SLO 1-5) Ch 2: Heat Conduction Equation (SLO 1)	HW 1 Quiz 1

3	Jan 31 Feb 2	No class Ch 2: Heat Conduction Equation (SLO 1)	HW 2 Quiz 2
4	Feb 7 Feb 9	Ch 3: Steady Heat Conduction (SLO 1)	HW 3 Quiz 3
5	Feb 14 Feb 16	Ch 4: Transient Heat Conduction (SLO 2)	HW 4 Quiz 4
6	Feb 21 Feb 23	Review for Exam 1 (SLO 1-2)	Exam 1
7	Feb 28 Mar 2	Ch 5: Numerical Methods in Heat Conduction (SLO 1-2)	HW 5 Quiz 5
8	Mar 7 Mar 9	Ch 6: Fundamentals of Convection (SLO 3)	HW 6 Quiz 6
	Mar 14-18	Spring Break	
9	Mar 21 Mar 23	Ch 7: External Forced Convection (SLO 3)	HW 7 Quiz 7
10	Mar 28 Mar 30	Ch 8: Internal Forced Convection (SLO 3)	HW 8 Quiz 8
11	Apr 4 Apr 6	Review for Exam 2 (SLO 1-3)	Exam 2
12	Apr 11 Apr 13	Ch 11: Heat Exchangers (SLO 4)	HW 9 Quiz 9
13	Apr 18 Apr 20	Ch 12: Fundamentals of Thermal Radiation (SLO 5)	HW 10 Quiz 10
14	Apr 25 Apr 27	Ch 13: Radiation Heat Transfer (SLO 5)	HW 11 Quiz 11
15	May 2 May 4	Review for Exam 3 (SLO 1-5)	Exam 3
16	May 9-13		

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 office hours and to complete homework, quizzes, exams. For video lectures and office hours, your computer will need a microphone and speakers/headphones and preferably video.

Students will need to register with McGraw-Hill Connect for homework, quizzes, and exams.

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

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. 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 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 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]

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/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 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. For the Spring 2022 semester, 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 [WOnline](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 by making an appointment via [WOnline](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.

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 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].

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

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](#) 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.