

CMGT 2303 – Construction Materials and Methods

Course Times & Classroom:

- Lecture: Monday & Wednesday 10:10 AM – 11:05 AM
- RBS 1031
- Lab: Monday 2:30 PM to 5:15 PM

Professor: Dr. Chi Tian

Email: ctian@uttyler.edu (Preferred communication method)

Office Hours: Tuesday & Thursday, 12:20 PM to 1:50 PM or by appointment

Office: RBS 1006

Course Dates: Jan. 13th, 2025 – May 2nd, 2025

Email Policy

- Please use the following format for your email subject line: [Course Number + HW#/Exam#/Lecture#].
- Practice writing professional emails for this class, as it is an essential skill in the construction industry.
- I will respond as soon as possible, but please allow up to 2 business days for a reply.

Attendance Policy

- Attending lectures regularly is the critical step for you to succeed in this class.
- Students who missed the lectures are responsible for getting the lecture notes/materials from classmates.

Hybrid Policy

- With advancements in technology, this class will also explore the feasibility of hybrid education. Some lectures will be recorded and made available on Canvas as videos, with prior notice.

AI Policy:

- You can only use AI for grammar checking for this course assignment.
- You need to clearly acknowledge the use of AI in your homework.

Course Overview

In this course, we will explore the fundamental materials, methods and sequences of the construction process, with emphasis on design, specification, purchase and use of concrete, steel, masonry and wood. You will also gain an understanding of the uses of construction materials. In the course laboratory, you will gain some hands-on experience in construction methods.

Student Learning Outcomes

1. Demonstrate tool safety and explain why it is important.
2. Develop an organized approach to building construction.
3. Interpret and apply building codes.
4. Explain the principles of wood construction.
5. Explain the principles of concrete, stone & masonry construction.
6. Explain the principles of steel construction.
7. Calculate material sizes from drawings.

Textbooks and Readings

Required Textbooks

- Fundamentals of Building Construction, Materials & Methods, 6th Edition by Allen and Iano, 2014 or later, Wiley, ISBN 978-1-118-82020-9.

Additional readings will be posted in CANVAS.

Graded Course Requirements Information

Homework Assignments and Quizzes

- The homework and quizzes assignments cover all contents from lectures, textbooks, readings and class discussion.
- The quizzes are usually due at the end of the lecture. Attending the lecture regularly is highly recommended to get access to all the quizzes.
- **Late submission:** Late submission **might** be accepted if (1) you contact me **at least 48 hours** in advance of the assignment and quiz deadline (2) **with official proof**. Example of acceptable official proof: medical record, academic conference invitation etc.

Lab

- You must come in person to finish the lab work and no makeup for the lab work.

Exams

- This course has three midterm exams and one final exam.
- Exams cover lectures, reading and class discussion.
- Exam make-up: You need to contact me **at least 48 hours** in advance of the exam **with official proof**. Example of acceptable official proof: medical record, academic conference invitation etc. No submission is allowed 48 hours after the deadline.

Professional Practice

- During the semester, a portion of your grade in this course will be derived from a level of professional practice expectations.
- These expectations include a professional demeanor and work ethic (attitude), consistent daily preparation (assignment reading, homework completed on time, etc.), commitment to learning and fulfilling the assigned projects.

Grading Policies

- Late submissions: It is a basic principle of professionalism that “Professionals are not late”. Deductions to your assignments grade for late submission will be given as follows:
 - 0-24 hours late a deduction of **25%** of the earned grade
 - 24-48 hours late a deduction of **50%** of the earned grade
 - More than 48 hours late **No credit.**
- Re-grade requests: You must come to my office hours if you have questions about your grades within **15 days** after they are posted. You should check your posted grades on Canvas regularly to track your progress.

Grading Structure

Content	Percentage %
Professional Practice/ online lecture quizzes	10 %
Laboratory Experience	25%
Assignments / Lab Quizzes	20%
Midterm Exams	30% (10% each)
Final Exam	15%
Total	100%

Grading Scale

- **A** - (90% or higher)
- **B** - (80 – 89.99%)
- **C** - (70 – 79.99%)
- **D** - (60 – 69.99%)
- **F** - (Below 60%)

A grade of 69 (D) or below will be a failure to complete the course for graduation in the department.

Calendar of Topics, Readings, and Due Dates (Posted)

Note: This is a tentative schedule, and subject to change as necessary – monitor the course page for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the

university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

CMGT 2303 Construction Materials and Methods				
Module 1 -- Introduction, Codes & Foundations				
Lesson/Lab #	Date	Topic	Reading	Assignments
Week 1	13-Jan	Making Buildings / Safety	Ch 1	Chapter 1 Key Terms
				Chapter 1 Making Buildings Quiz
	15-Jan			Assign 1: Building Codes Quiz
Lab 1	13-Jan	Tool Safety Practical		Online Safety Test
				Pre-Lab
				Safety Policy Quiz
				Engineering Safety Training Test
				Assign 2: Class Introductions Wiki
Week 2	22-Jan	Foundations/Plan Reading	Ch 2	Chapter 2 Key Terms
				Chapter 2 Quiz
				Assign 3: Foundations
	27-Jan	<i>Census Date</i>		<i>Last day to Withdraw Without Penalty</i>
Module 2 -- Wood Construction				
Lesson/Lab #	Date	Topic	Reading	Assignments
Week 3	27-Feb	Wood Light Frame Construction	Chs 3 & 5	Chapter 3 & 5 Key Terms
				Chapter 3 Quiz
				Assign 4: Wood Labels
	29-Jan			Assign 5: Wood Properties
				Chapter 5A Quiz: Walls
Lab 2	27-Jan	Build Batter Boards		Lab 2 Report
Lab 3	27-Jan	Light Frame Wood Construction		Pre-Lab
				Lab Report
Week 4	3-Feb 5-Feb	2-Hour House Video Roofs Heavy Timber	Ch 4	Chapter 4 Key Terms
				Chapter 5B Quiz: Roofs
				Assign 7: Roof Calculations
				Chapter 4 Quiz
				Asgn 6: Heavy Timber
Lab 4	3-Feb			Pre-Lab: Framing Square

		Design Table-top Roof		Post-Lab: Drawings
Week 5	10-Feb	Exterior Finishes for Wood LFC	Ch 6	Chapter 6 Key Terms
	12-Feb			Chapter 6 Quiz
				2-Hour House Quiz
Lab 5	10-Feb	Build table-top roof		Pre-Lab 5 Drawings
				Post-Lab 5 Report
Week 6	17-Feb	Interior Finishes for Wood LFC	Ch 7	Chapter 7 Key Terms
	19-Feb			Assign 8: Stairs
				Chapter 7 Quiz
Lab 6	17-Feb	Exam 1		Exam 1
Module 3 -- Concrete, Masonry & Steel				
Lesson/Lab #	Date	Topic	Reading	Assignments
Week 7	24-Feb	Brick Masonry	Ch 8	Chapter 8 Key Terms
	26-Feb			Chapter 8 Quiz
				Assign 9: Bricks
Lab 7	24-Feb	Build CMU Walls / Form Concrete Wall Cap		Work Table Design in Lab
				Lab 7 Report - Concrete
Week 8	3-Mar	Stone & Concrete Masonry, Brick Construction	Chs 9 & 10	Chapter 9 & 10 Key Terms
	5-Mar			Chapter 9 Quiz
				Chapter 10 Quiz
				Assign 10: Brick Walls
Lab 8	3-Mar	Mix concrete		Assign 11: Steel
				Lab 8 Report Masonry
Week 9	10-Mar	Hot Rolled Steel & Light Gauge Steel Frame	Chs 11 & 12	Chapter 11 & 12 Key Terms
	12-Mar			Chapters 11 Quiz
				Chapter 12 Quiz
Lab 9	10-Mar	Steel Frame Constr. / Light Gage Steel Lab / Review Table Designs 7 day concrete tests		Lab 9 Report Steel
Week 10		Spring Break		
Week 11	24-Mar			Chapter 13, 14, & 15 Key Terms

		Concrete construction / Precast Concrete & Low Slope Roofs	Chs 13, 14 & 15	Chapter 13 Quiz
	26-Mar			Chapter 14 Quiz
				Chapter 15 Quiz
				Assign 12: Concrete Reinforcement
Lab 10	24-Mar	Exam 2		
Module 4 -- Cladding				
Lesson/Lab #	Date	Topics	Reading	Assignments
Week 12	31-Mar	Roofing, Glazing, & Windows and Doors	Chp 16 & 17	Chapter 16 & 17 Key Terms
				Chapter 16A Quiz
				Chapter 16B Quiz
				Chapter 17 Quiz
	2-Apr			Asgn 14 Roofs
Lab 11	31-Mar	Build table / Install Doors		Pre-Lab
				Lab Report
Week 13	7-Apr	Cladding Masonry, Concrete, Metal & Glass	Chp 18, 20 & 21	Chapter 18, 20, & 21 Key Terms
				Chapter 18 Quiz
				Chapter 20 Quiz
				Chapter 21 Quiz
	9-Apr			
Module 5 -- Interior Finishes				
Lesson/Lab #	Date	Topics	Reading	Assignments
Lab 12	7-Apr	Complete Table Build 28 day concrete test		Drawings and Materials list
Week 14	4/14/2025	Interior Finishes	Chp 23 & 24	Chapter 23 & 24 Key Terms
				Chapter 23 Quiz
	16-Apr			Chapter 24 Quiz
Lab 13	14-Apr	Exam 3		Table Lab Report Due
Week 15	4/24/2025	Selecting Interior Finishes	Chp 22	Chapter 22 Key Terms
	26-Apr			Chapter 22 Quiz
Lab 14	24-Apr	Review Final		

Final Week	Scheduled Final Exam	TBD
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Student Resources:

Resources available to UT Tyler Students

- [UT Tyler Counseling Center](#) (available to all students)
- [MySSP App](#) (24/7 access to Student Support Program counseling through phone or chat and online wellness resources available in a variety of languages)
- [Student Assistance and Advocacy Center](#)
- [Military and Veterans Success Center](#) (supports for our military-affiliated students)
- [UT Tyler Patriot Food Pantry](#)
- [UT Tyler Financial Aid and Scholarships](#)
- [UT Tyler Student Business Services](#) (pay or set up payment plans, etc.)
- [UT Tyler Registrar's Office](#)
- [Office of International Programs](#)
- [Title IX Reporting](#)
- [Patriots Engage](#) (available to all students. Get engaged at UT Tyler.)

University Policies and Information

Withdrawing from Class

Students may [withdraw](#) (drop) from this course using the [Withdrawal Portal](#). Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email enroll@uttyler.edu to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully [read the implications for withdrawing from a course and the instructions](#) on using the [Withdrawal portal](#).

Texas law prohibits students from dropping more than six courses during their entire undergraduate career*. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance. **CAUTION #1:** Withdrawing before census day does not mean you get a full refund. Please see the [Tuition and Fee Refund Schedule](#). **CAUTION #2:** All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. **CAUTION #4:** All veterans or military-affiliated students should consult with the [Military and Veterans Success Center](#).

* Students who began college for the first time before 2007 are exempt from this law.

Artificial Intelligence Statement

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. *Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).*

Final Exam Policy

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

Incomplete Grade Policy

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade *only when all of the following conditions are met*: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

Grade Appeal Policy

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and

supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the [Registrar's Form Library](#).

NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, the SAR office located in the Robert Muntz Library, LIB 460, email saroffice@uttyler.edu, or call 903.566.7079."

Military Affiliated Students

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Success Center \(MVSC\)](#) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

Students on an F-1 Visa

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

Academic Honesty and Academic Misconduct

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the [Student Conduct and Discipline policy](#) in the Student Manual Of Operating Procedures (Section 8).

FERPA

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [University Policy 5.2.3](#). The course instructor will follow all requirements to protect your confidential information.

Absence for Official University Events or Activities

This course follows the practices related to [Excused Absences for University Events or Activities](#) as noted in the Catalog.

Absence for Religious Holidays

This course follows the practices related to [Excused Absences for Religious Holy Days as noted in the Catalog](#).

Absence for Pregnant Students

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at parents@uttyler.edu and also complete the [Pregnant and Parenting Self-Reporting Form](#).

Campus Carry

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.