

MEMORANDUM

To: CMGT4313 Students
From: Elina Efthymiou, Ph.D., Assistant Professor, Instructor CMGT4313
Date: 6 January 2025
Subject: CMGT4313 Course Administration, Spring 2025

Instructor:	Dr. Elina Efthymiou	Office Hours:
	RBS 1036	M/W: 10:00AM – 12:30PM
	☎ 903 565-5890	or by appointment
	✉ eefthymiou@uttyler.edu	

Lecture: Monday/Wednesday: 2:30 – 3:55 PM, RBN 3040

Course Website:

Canvas will be used to manage the course material for the semester. There you will find homework assignments, solutions, handouts and other material pertaining to the class. **Please check there regularly.**

- 1. WELCOME to CMGT 4313 – Construction Applications for Concrete.** In this course, you will learn how to analyze, and design reinforced concrete structures. Specific course objectives are provided in Enclosure 1. A tentative course schedule is provided in Enclosure 2.
- 2. ATTENDANCE: This is an in-person and Zoomed course.** You are expected to attend all face-to-face classes either in person or via Zoom (for the HEC students), and watch online lectures, if applicable. Lectures and class discussions will contain vital information needed to do well on the exams. If you know that you will miss a class, email me a note to that effect prior to the class. If your absence is unexpected, email me as soon as feasible. If you miss a scheduled class, you are still responsible for the material.
- 3. FLIPPED CLASSROOM:** Some classes will be a flipped classroom. This means you must watch the videos for that class online, then attend class to work on the homework assignments. If you do not attend class, you will not receive credit for the assignments assigned that day, even if you turn them in. See Canvas for detailed requirements for each class.
- 4. EXTRA HELP: PLEASE DO NOT WAIT UNTIL THE LAST MINUTE.** If you are having trouble with this class, please come by my office during office hours, before/after class, or by appointment. I am also available by email at: eefthymiou@uttyler.edu. I can also schedule Zoom meetings as needed.
- 5. CLASSROOM PROCEDURES:** Bring study notes, handouts, note-taking material, and calculator to every class. Class preparation is your individual responsibility.

6. COURSE MATERIALS: The texts for CMGT4313 are shown below. Do not sell them back at the end of the semester, as you may need them during your professional engineering career.

a. Textbook (optional):

Reinforced Concrete Design, 9th Edition, Abi O. Aghayere, ISBN: 978-0134715353, Pearson, 2018, (or the 10th Edition of the same textbook)

Reference Material: *ACI 318-19; Building Code Requirements for Structural Concrete & Commentary*

b. Additional course material will be available on Canvas throughout the course.

c. All course materials including class PowerPoint presentations will be posted on Canvas. Canvas enrollment should be automatic with course registration but ensure that you can access the class Canvas page.

d. All assignments will be posted on Canvas and the submission deadlines will be included in the class schedule. It is your responsibility to check the site for changes and addendums.

3. CLASS PREPARATION.

a. You will find available on Canvas specific lesson objectives, study assignments, and reading questions that support the lesson. Pay attention to the lesson objectives: they describe concepts and procedures you must understand to master CMGT4313.

b. As a senior-level course, you are expected to arrive in class fully prepared for the lesson. Of the expected **two-hour out-of-class preparation** time for each lesson I recommend spending one hour reviewing previous lessons and/or working on assigned homework and the other hour studying and answering the reading questions for the upcoming lesson. Because this is a more advanced course not every topic you are required to know will be covered in class but will be addressed by lesson objectives and assigned reading.

c. Assigned readings and videos: Doing the assigned readings and watching the videos prior to class will help you to understand the material presented during the instruction and will fill in gaps for things we do not cover (***I will not cover everything***). It will also make you more familiar with terms and concepts to be covered. Being prepared for class will enhance your ability to learn!

d. **How to watch a video lecture:** All video lectures come with a power point. Print out the power point and take notes. In some cases, I expect you to complete the math for problem solutions. Do it and check that you get the correct answers on your calculator. This ensures that you understand how to type in complicated formulas on your calculator. If you do not understand a portion of the video, watch it again. If you still don't, ask your classmates for help. If you still have a problem, come to me as a group and I will work with you.

7. GRADE PLAN:

- a. **Graded Events.** Your grade in CMGT4313 will be based on the following requirements:

<u>Graded Event</u>	<u>Points</u>
Assignments / Quizzes	700 (35%)
Team Project	300 (15%)
Midterm Exams (3 at 200 each)	600 (30%)
Final Exam	400 (20%)
Total	2000 (100%)

- b. **Grade Scale.** At the end of the term, your accumulated points will be converted to a letter grade. The following grade cutoffs are guaranteed:

<u>Grade</u>	<u>Cutoff %</u>
A	90–100
B	80–89
C	70–79
D	60–69
F	<60

If necessary, I reserve the right to adjust the grade scale at the end of the semester to your benefit. If you earn less than 65% on all Exams or if you fail to earn at least 50% on the Final you may fail the course, **regardless of your course grade.**

****NOTE:** There will be no makeup work or extra credit allowed/granted at the end of or during the semester unless allowed/granted to everyone by the instructor. All assignments must be turned in at the appropriate time to receive credit.

- c. All grades will be posted on Canvas. It is your responsibility to monitor your grades to determine if you are achieving the grade you desire.

7. MID-TERM EXAMS:

- a. This course includes **three** mid-term Exams.
- b. Solutions to exams will **NOT** be posted on Canvas.
- c. No make-up exams will be given except for medical or other similar hardships where advanced arrangements are made with the instructor; or in case of non-selective medical emergencies with appropriate physician's note or documentation. Other than circumstances described above, failure to take the exam at the scheduled time will constitute a grade of zero in the exam.
- d. The mid-term Exams are closed book. You may use a calculator and one 8.5-in x 11-in page (front and back) of your handwritten notes on your exams.

8. FINAL EXAM:

- a. All students will take the Final Exam.
- b. The final exam is closed book. You may use a calculator and three 8.5" x 11" pages (front and back) of your handwritten notes on your exams.

9. **CELL PHONES:** Please remember to turn off sound to phones prior to class.

10. COLLECTION OF STUDENT WORK: Throughout the semester I will collect student work (best, average, and worst) for the accreditation course and outcomes notebooks. It will not draw attention as to what level of work you accomplished.

11. EMBEDDED INDICATORS OF ACCOMPLISHMENT OF PROGRAM OUTCOMES: At times throughout the semester, portions of student work will be analyzed to determine if our program is accomplishing stated program outcomes based on established metrics.

12. ASSIGNMENTS: Homework problems will typically be assigned on a daily basis. You are encouraged to *discuss* your homework solutions with one another, but in the end you must submit your own, **independent** work. The homework due dates and times will be clearly given with the homework assignment on Canvas. Homework is due on the date outlined in the schedule. **You must upload your homework on Canvas no later than 11:59pm on the date it is due.**

13. STANDARDS FOR WRITTEN WORK.

- a. **Neatness.** Sloppy, disorganized work will receive significant point reduction subject to your instructor's judgment, and you will resubmit clear, organized work.
- b. **Organization.** Homework should be logically organized. If doing calculations by hand, use engineering paper for problem sets and sample calculation pages. Use the format shown at Enclosure 3 as the standard for homework and sample calculation pages. Many problems require a "Given, Find, Formula, Solution" format. Clearly present a **brief problem statement and a sketch** as the "Given" portion. Clearly and concisely explain each step. Many of my Example Solutions have numbered steps, include these numbered steps as part of the solution. For narratives of more than a line or two, type your answers in Word.
- c. **Explanation of Work.** When you do engineering calculations, you must explain your work such that an uninformed reader can follow precisely how and why you performed each step; tell a story as you work through a problem. Practicing engineers maintain very high standards in the quality of their calculations because their work is checked independently by other engineers as part of the design review process.
- d. **Drawings / Sketches.** We communicate with drawings. You must learn to supplement your engineering calculations with clear sketches. This will help others understand what you did and help you organize your thoughts and solve the problem. Importantly, you must learn to present completed design work in the form of comprehensive and detailed drawings. Use this course as an opportunity to refine your drawing skills. Use a straightedge for all straight lines. Use dimension lines. Print neatly.

14. DOCUMENTATION OF ACADEMIC WORK (DAW).

- a. Use parenthetical documentation (see Enclosure 3).
- b. All submissions must have a signed cover page. Before signing this document take time to reflect and ensure that all work is either yours or that credit is given within where due. Assignments will not be accepted without this signed cover page. For group assignments all members of the group must sign the cover sheet.
- c. **Common knowledge.** Information from the course texts is considered course-specific common knowledge, and does not need to be documented for problem sets. Course

documents from previous semesters, and course notebooks of other students kept, or the like are not considered common knowledge and must be documented.

15. LATE SUBMISSIONS. It is a basic principle of professionalism that “**Professionals are not late.**” A “*coordinated late*” submission occurs when you will miss the deadline for a graded homework assignment, and you contact your instructor in advance. Notification immediately before the submission will not suffice. Deductions to your assignment grade for late submissions will be given as follows:

1 – 24 hours late	a deduction of 25% of the earned grade
24 – 48 hours late	a deduction of 50% of the earned grade
> 48 hours late	No credit

Obviously, there are circumstances that can occur that make a timely submission impossible, and your instructor will work with you when and if they occur.

16. ADDITIONAL INSTRUCTION. CMGT4313 is rigorous and fast-paced. Do not fall behind, or you may fail to catch up. If you have difficulty understanding a lesson or completing a problem set, see your instructor. If you miss a class, you are responsible for the material; get the notes from another student or schedule time to meet with your instructor. If you need additional instruction, feel free to drop by my office during office hours. Before coming to additional instruction, consider specific questions and try to send them to your instructor ahead of time. Do not come to additional instruction with vague questions or without having first attempted to solve the assigned problems.

17. Extra credit: There is none. Students who keep up with their assignments, labs, and prepare for the exams will do well in this class.

18. Academic Misconduct: Plagiarism of homework and cheating on examinations will be interpreted as academic misconduct and will not be tolerated. Please refer to the University of Texas at Tyler current Undergraduate Catalog for academic policies and Manual of Policies and Procedures for Student Affairs (MOPPS, Chapter 8) regarding academic integrity, cheating and plagiarism. Academic dishonesty will not be tolerated. Ignorance of the rules and policies provides no protection from the consequences.

19. FINAL GUIDANCE. Be prepared to work hard and have fun this semester!

This syllabus is subject to revision by the instructor.

Elina Efthymiou, PhD



Assistant Professor
CMGT 4313 Course Instructor

Enclosure 1: CMGT 4313 Course Objectives

1. **Understand** the structural characteristics of reinforced concrete.
2. **Perform** an analysis on reinforced concrete structural elements.
3. **Perform** a design of reinforced concrete structural elements.
4. Effectively use class lectures, text materials, and building models to **understand** structural systems.
5. **Obtain** team building skills through a team project.
6. **Utilize** construction software related to their project.

Enclosure 2: Tentative Course Schedule

CMGT 4313 – Construction Applications for Concrete Course Schedule; Spring 2025							
Les. #		Date	Topic: Watch all videos before coming to class.	Asgn #	Homework	Due	
Week 1							
1	Mon	13-Jan	Introduction: Materials Used in Making Reinforced Concrete	A1 Q1	Intro Wiki	15-Jan	
2	Wed	15-Jan	Properties of Reinforced Concrete Example Problems Video	A2 Q2	Concrete Properties	22-Jan	
Week 2							
3	Wed	22-Jan	Details and Detailing of Concrete Reinforcement; CRSI Placing Drawings; Design Construction Process; How reinforcing steel is fabricated				
			Reading Foundation Drawings	A3 Q3-Q5	Questions R001-R007	27-Jan	
Week 3							
4	Mon (Census Day)	27-Jan	Reading Column Steel and Earthquake Stability	A4	How to Read Column Plans	29-Jan	
			Reading Basement Wall and Shear Wall Drawings, Crane Foundations	A5	How to Read Wall Plans		
5	Wed	29-Jan	Cast in Place Beams and Floors Pan forms concept to completion, NS10-2pans	A6	How to Read Beam Plans	3-Feb	
			Reading Highway Structures Drawings	A7	Bridge Dwg H3	In Class	
Week 4							
6	Mon	3-Feb	Chapter 5 Development & Splices	A8a Q6		5-Feb	
7	Wed	5-Feb	Crane Foundations – Video	A8b Q7		10-Feb	
			Materials & Mechanics of Bending	A9	Problems Unreinforced Concrete		
Week 5							
8	Mon	10-Feb	No Class; Study for Exam 1				
9	Wed	12-Feb	Midterm Exam #1				In-Class
Week 6							
10	Mon	17-Feb	Chapter 2 Reinforced Concrete Strength Design Method	A10	Reinforced Beam Problems	19-Feb	
			Reinforcing Steel Clearance & Spacing	A11	Clearance Problems		
11	Wed	19-Feb	2-7 & 8 Rect. Beam Analysis	PQ A12	Beam analysis	24-Feb	
			Explanation for β_1 and ϕ	A13	Beam Strength		
Week 7							
12	Mon	24-Feb	Begin Term Project Reinforced Concrete Beams: T-Beams	A15	T-Beams	26-Feb	
			2-12 Oneway slabs	A14	Slab Analysis		
13	Wed	26-Feb	Doubly Reinforced Beams	A16	Doubly Reinforced Beams	3-Mar	

Week 8						
14	Mon	3-Mar	Bubble Slabs / Pan Forms	A27	Bubble Slabs	5-Mar
15	Wed	5-Mar	No Class; Study for Exam 2			
Week 9						
16	Mon	10-Mar	Midterm Exam #2			In-Class
17	Wed	12-Mar	Shear in Beams Shear & Moment Diagrams Light Board Video	A 17 A18 A19	Shear Capacity & steel in Beams	24-Mar
Spring Break 17-21 March						
Week 10						
18	Mon	24-Mar	Continuous Construction Design Considerations/Serviceability	A20 A21	Problems	26-Mar
19	Wed	26-Mar	Retaining Walls Part I	A22 A23 Q8	Excel Example Retaining Wall	31-Mar
Week 11						
20	Mon	31-Mar	Retaining Walls Part 2	Q9	In Class Example	2-Apr
21	Wed	2-Apr	Columns, Term Project review	A24 Q10	Columns Problems	7-Apr
Week 12						
22	Mon	7-Apr	Footings			In-Class
23	Wed	9-Apr	Footings	A25 Q11	Footing Design	14-Apr
Week 13						
24	Mon	14-Apr	Prestressed Concrete St. Croix Bridge	A26	St. Croix Essay	16-Apr
25	Wed	16-Apr	No Class; Study for Exam 3			
Week 14						
26	Mon	21-Apr	Midterm Exam #3			In-Class
27	Wed	23-Apr	Project Presentation		Project Presentation in class Final Drawings due; Final Project Report	
Week 15						
April 28 – May 2			Finals Week			

*Subject to revision by the instructor

