



MEMORANDUM

To: CMGT4313 Students
From: Elina Efthymiou, Ph.D., Assistant Professor, Instructor CMGT4313
Date: 19 January 2024
Subject: CMGT4313 Course Administration, Spring 2024

Instructor:	Dr. Elina Efthymiou RBS 1036 ☎ 903 565-5890 ✉ eefthymiou@uttyler.edu	Office Hours: M/W/F: 10:30AM – 12:30PM or by appointment
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Lecture: Monday/Wednesday: 2:30 – 3:55 PM, RBS 1031

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 at the end of this memorandum. 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, contact your instructor to that effect prior to the class. If you miss a scheduled class, you are still responsible for the material.

3. 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 an assignment, see your instructor. If you need additional instruction, feel free to stop by my office during office hours, before/after class, or by appointment. I can also schedule Zoom meetings as needed. 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.

4. Classroom procedures: Bring study notes, handouts, note-taking material, and calculator to every class. Class preparation is your individual responsibility.

5. 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: Mechanics and Design, 8th Edition*, James K. Wight, Pearson, Hoboken, New Jersey, 2021

b. **Codes & Guidelines:**

i. AISC Steel Construction Manual, 15th (or 16th) Edition;

- ii. ACI CODE-318-19(22): Building Code Requirements for Structural Concrete and Commentary

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

6. 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 as 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!

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	600 (30%)
Team Project	200 (10%)
Professional Practice	200 (10%)
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.

8. Mid-term exams:

- a. This course includes three (3) 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 the circumstances described above, failure to take the exam at the scheduled time will constitute a grade of zero on 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.

9. 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 the final.

10. Cell phones: Please remember to turn off sound to your phone prior to class.

11. 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 as a single pdf file to Canvas no later than 11:59pm on the date it is due.**

12. Standards for written work:

- a. **Neatness.** Sloppy, disorganized work will receive significant point reduction subject to your instructor's judgment.
- 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 in Enclosure 3 of this memorandum 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.
- 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.

13. Documentation of academic work:

- 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 (Wight, AISC Steel Construction Manual, ACI 318-19(22) code etc.) is considered course-specific common knowledge and does not need to be documented for problem sets. While not required, it is good practice to note sections of the AISC Steel Construction Manual or the ACI 318-19(22) which apply as you solve problems. Course documents from previous semesters, and course notebooks of other students kept, or the like are not considered common knowledge and must be documented.

14. 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.

- 15. Extra credit:** There is none. Students who keep up with their assignments and prepare for the Exams will do well in this class.
- 16. Professional Practice:** During this semester, a portion of your grade in this course (10%) 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, appropriate materials brought to class, etc.), commitment to learning and fulfilling obligations (attendance, on time), and being engaged in class activities (participation).

17. 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.

18. Final guidance: Be prepared to work hard and have fun this semester!

See Canvas for UNIVERSITY POLICIES AND ADDITIONAL INFORMATION THAT MUST APPEAR IN COURSE SYLLABUS

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: Course Schedule

CMGT 4313 – Construction Applications for Concrete Course Schedule; Spring 2024						
LSN. #	Date	Topic	Asgn #	Homework	Due	
Week 1						
1	Wed	17-Jan	Introduction: Materials Used in Making Reinforced Concrete	A1 Q1	Intro Wiki	22-Jan
Week 2						
2	Mon	22-Jan	Properties of Reinforced Concrete	A2 Q2	Concrete Properties	24-Jan
3	Wed	24-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	29-Jan
Week 3						
4	Mon	29-Jan	Reading Column Steel and Earthquake Stability	A4	How to Read Column Plans	31-Jan
			Reading Basement Wall and Shear Wall Drawings, Crane Foundations	A5	How to Read Wall Plans	5-Feb
5	Wed	31-Jan	Cast in Place Beams and Floors Pan forms concept to completion, NS10-2pans	A6	How to Read Beam Plans	7-Feb
			Reading Highway Structures Drawings	A7	Bridge Dwg H3	In Class
Week 4						
6	Mon	5-Feb	Chapter 5 Development & Splices	A8a Q6		7-Feb
7	Wed	7-Feb	Crane Foundations	A8b Q7		12-Feb
			Materials & Mechanics of Bending	A9	Problems Unreinforced Concrete	12-Feb
Week 5						
8	Mon	12-Feb	No Class; Study for Exam 1			
9	Wed	14-Feb	Midterm Exam #1			
Week 6						
10	Mon	19-Feb	Chapter 2 Reinforced Concrete Strength Design Method	A10	Reinforced Beam Problems	21-Feb
			Reinforcing Steel Clearance & Spacing	A11	Clearance Problems	
11	Wed	21-Feb	2-7 & 8 Rect. Beam Analysis	PQ A12	Beam analysis	26-Feb
			Explanation for β_1 and ϕ	A13	Beam Strength	

CMGT 4313 – Construction Applications for Concrete Course Schedule; Spring 2024						
LSN. #	Date	Topic	Asgn #	Homework	Due	
Week 7						
12	Mon	26-Feb	Begin Term Project	A15	T-Beams	28-Feb
			Reinforced Concrete Beams: T-Beams			
			2-12 Oneway slabs	A14	Slab Analysis	
13	Wed	28-Feb	Doubly Reinforced Beams	A16	Doubly Reinforced Beams	4-Mar
Week 8						
14	Mon	4-Mar	Bubble Slabs / Pan Forms	A27	Bubble Slabs	6-Mar
15	Wed	6-Mar	No Class; Study for Exam 2			
Spring Break 11–15 March						
Week 9						
16	Mon	18-Mar	Midterm Exam #2			
17	Wed	20-Mar	Shear in Beams	A17	Shear Capacity & steel in Beams	25-Mar
			Shear & Moment Diagrams	A18 A19		
Week 10						
18	Mon	25-Mar	Continuous Construction Design Considerations/Serviceability	A20 A21	Problems	27-Mar
19	Wed	27-Mar	Retaining Walls Part I	A22 A23 Q8	Excel Example Retaining Wall	1-Apr
Week 11						
20	Mon	1-Apr	Retaining Walls Part II	A20 A21	In Class Example	3-Apr
21	Wed	3-Apr	Columns Term Project review	A22 A23 Q8	Columns Problems	8-Apr
Week 12						
22	Mon	8-Apr	Footings			in Class
23	Wed	10-Apr	Footings	A25 Q11	Footing Design	15-Apr
Week 13						
24	Mon	15-Apr	Prestressed Concrete St. Croix Bridge	A26	St. Croix Essay	17-Apr
25	Wed	17-Apr	No Class; Study for Exam 3			
Week 14						
26	Mon	22-Apr	Midterm Exam #3			
27	Wed	24-Apr	Course Review			
FINAL EXAM			Project Presentation During Final time		Project Presentation in class Final Drawings due; Final Project Report	

*Subject to revision by the instructor

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