

MEMORANDUM FOR STUDENTS ENROLLED IN CMGT 4313 Structural Applications for Concrete

SUBJECT: CMGT 4313 Administrative Instructions, Spring 2021

1. **Welcome to CMGT 4313 – Applied Construction Structural Systems.** In this course you will learn to analysis and design reinforced concrete structures and other structures as time allows. A tentative course schedule and introduction to instructor are provided in Attachments 1 and 2. Specific course objectives are provided in Attachment 3.
2. **Attendance: This is a Hybrid course.** You are expected to attend all face-to-face classes and watch all online lectures. Lectures and class discussions will contain vital information needed to do well on the exams. It is your responsibility to sign the attendance roster each class period.
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: aarnold@uttyler.edu.
5. **Class Room Procedures:**
Bring study notes, handouts, note-taking material, and calculator to every class. Class preparation is your individual responsibility.
6. **Course Materials:**
 - a. Textbook, optional:
Reinforced Concrete Design, Seventh Edition by George F. Limbrunner, . Abi O. Aghayere, 2010, ISBN: 9780135046821
Reference Material: *AISC Manual of Steel Construction*, 14th Edition
 - b. I will provide other materials throughout the course.
 - c. I will post all course materials including class PowerPoint's 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 on the class schedule. It is your responsibility to check the site for changes and addendums.
7. **Exams and Grading:**
 - a. Grade Breakout and Cutoffs:

Course Points

Assignments / Quizzes	685 (34.3%)
Team Project	215 (10.8%)
Professional Practice	100 (5%)
Midterm Exams (3 at 200 each)	600 (30%)
Final Exam	400 (20%)
	2,000 (100)

University grade breaks will be used in final grade posting.

If you earn a cumulative average of less than 65% on all exams, or if you fail to earn at least 50% on the final exam you may fail the course, **regardless of your course grade.**

- b. 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.
 - c. Mid-term Exams and Final Exam:
 - 1) The dates for all exams are included in the course schedule. Official reasons for missing an exam are outlined in the UT Student Handbook. You are required to take a make-up Exam, regardless of your reason for missing the scheduled Exam. Report any conflict to me as soon as possible prior to the Exam.
 - 2) The mid-term and final exams are closed book. You may use a calculator and one 8.5" x 11" page of your hand written notes on your exams.
 - d. Cell Phones: Please remember to turn off sound to phones prior to class.
 - e. Collection of Student Work: Throughout the semester I will collect student work (best, average, and worst) for the accreditation course and outcomes notebooks. This will require me to make a copy of your work, keep your original and return a copy of the graded work to you. It will not draw attention as to what level of work you accomplished.
 - f. 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.
7. **Assignments:** Homework problems will typically be assigned on a daily basis. Students are encouraged to *discuss* their homework solutions with one another, but each student must submit their own, **independent** work. The homework due dates and times will be clearly given with the homework assignment on Canvas. Hand written homework is due by 5:00pm on the due date. For some homework, you will be required to work it during the class time. You must attend class to get credit for those assignments. Hand written homework may be turned in during class if we meet that day or directly to me in my office (or under the door if I am not their).

Assignment Format: The student is expected to present professional, neat, organized, high-quality assignments. An assignment should be something you are proud of and not something hastily "slapped together". Assignments that are unreadable will be marked wrong. As a construction manager your goal is to make a clear, logical, and professional presentation of your work, which is both accurate and correct. As such both your

presentation and the accuracy of your work are important, and both will be graded. It is critical that you show all your work and leave “footprints” so that it can be easily followed. This means that equation numbers, figures, or other tools used should be clearly identified.

a. Problem Sets:

1) **Use professional looking paper only or full-page printouts from Mathcad, Excel, etc.** You may neatly tape or glue short computer printouts onto the submittal at the appropriate place in the logical flow of the problem. 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, use your word processor or the text capability if you are using MathCAD or Excel. If you are writing out a paragraph or more, you must type it.

2) 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 me in advance. Notification immediately before the submission will not suffice. Deductions to your assignment grade for late submissions will be given as follows:

1. 1-24 hours late a deduction of 25% of the earned grade
2. 24-48 hours late a deduction of 50% of the earned grade
3. More than 48 hours late No credit.

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

b. 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!

c. **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 class mates for help. If you still have a problem, come to me as a group and I will work with you.

8. **Extra credit:** There is none. Students who keep up with their assignments, labs, and prepare for the exams will do well in this class.
9. **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).

10. **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.

UNIVERSITY POLICIES AND ADDITIONAL INFORMATION THAT MUST APPEAR IN EACH COURSE SYLLABUS

UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

Campus Carry

We respect the right and privacy of students 21 and over 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>

UT Tyler a Tobacco-Free University

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors.

Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products.

There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

Grade Replacement/Forgiveness and Census Date Policies

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is Sept. 12.) Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date (Sept. 12th) is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

State-Mandated Course Drop Policy

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

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 you have 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 Cynthia Lowery, Assistant Director of Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.

Student Absence due to Religious Observance

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

Student Absence for University-Sponsored Events and Activities

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

Emergency Exits and Evacuation

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

Student Standards of Academic Conduct

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

- i. "Cheating" includes, but is not limited to:
 - copying from another student's test paper;
 - using, during a test, materials not authorized by the person giving the test;
 - failure to comply with instructions given by the person administering the test;
 - possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
 - using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
 - collaborating with or seeking aid from another student during a test or other assignment without authority;
 - discussing the contents of an examination with another student who will take the examination;

- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
 - substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
 - paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
 - falsifying research data, laboratory reports, and/or other academic work offered for credit;
 - taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
 - misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.
- ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.
- iii. "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.
- iv. All written work that is submitted will be subject to review by plagiarism software.

UT Tyler Resources for Students

- [UT Tyler Writing Center](http://writingcenter@uttyler.edu) (903.565.5995), writingcenter@uttyler.edu
- [UT Tyler Tutoring Center](http://tutoring@uttyler.edu) (903.565.5964), tutoring@uttyler.edu
- The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- [UT Tyler Counseling Center](http://counseling@uttyler.edu) (903.566.7254)

CMGT 4313 – Structural Applications for Concrete Course Schedule – Spring 2022 TTH 2:00-3:20pm			
Topic	ASGN #	Homework	Resources
Week 1			
Reading Foundation Drawings	A1	Questions R001-R007	In Class Placing Drawing R001-R004
Properties of Reinforced Concrete Example Problems Video	A2	Concrete Properties	Properties of Reinf Concr Vid How to HW Problems Video
Introduction: Materials Used in Making Reinforced Concrete	A3 Q1	Intro Wiki, Online Quiz	Materials Used in Making Reinf Concrete Video & PPT
Week 2			
MLK No class			
Details and Detailing of Concrete Reinforcement	Q2	Quiz	Detailing of Concrete Reinf CRSI Report Detail Dwg
CRSI Placing Drawings	Q3	Quiz	CRSI Placing Drawings pdf
Design Construction Process How reinforcing steel is fabricated	Q4	Quiz	Design Constr Process Video How reinf steel is fabricated
Week 3			
Reading Column Steel and Earthquake Stability	A4	How to Read Column Plans	R010 - R019 Earthquake Hazard Info 1
Reading Basement Wall and Shear Wall Drawings, Crane Foundations	A5 Q5	How to Read Wall Plans Quiz	R020-R024 Read Basement Wall Video, Crane Foundations Video
Cast in Place Beams and Floors Pan forms concept to completion, NS10-2pans	A6	How to Read Beam Plans	R029-R039 R051-R060 Read Beam Video
Week 4			
Reading Highway Structures Drawings	A7	Read HW Bridge Dwg H3	Highway Drawing H-3
Chapter 5 Development & Splices Review for Exam 1	A8	Problems Development	Chapter 5 Development & Splices Video
Materials & Mechanics of Bending	A9	Problems Unreinforced Concrete	Materials & Mechanics of Bending Video AISC Shear & Mom't Diag.
Week 5			
Midterm Exam #1 Online and Takehome			Exam over Reading drawings and videos thru Feb 3.
Chapter 2 Reinforced Concrete Strength Design Method	A10	Reinforced Beam Problems	Chapter 2 Reinforced Concrete Video
Reinforcing Steel Clearance & Spacing	A11	Clearance Problems	Reinforcing Steel Lightboard Video
Week 6			
2-7 & 8 Rect. Beam Analysis	PQ A12	Beam analysis	2-7&8 Rect. Beam Analysis 2-10 Rect. Beam Analysis
Explanation for Beta1 (β_1) and Phi (ϕ)	A13	Beam Strength	2-9 Strength Requirements Beta1 and Phi
2-12 Oneway slabs	A14	Slab Anaysis	2-12 Slabs Handout
Week 7			
BeginTerm Project Reinforced Concrete Beams: T-Beams	A15	T-Beams	Begin Term Project - Beam & Slab Design
Doubly Reinforced Beams	A16	Doubly Reinforced Beams	3-7 Doubly Reinforced Beams Handout, Example Problem 3-6
Bubble Slabs / Pan Forms	Q6	Quiz	Bubble Slabs PPT

Week 8			
Review for Exam 2			Roof Slab Design Due
Midterm Exam #2			
Shear & Moment Diagrams Light Board Video	A17	Shear & Moment	
8-13 March		Spring Break	
Week 9			
Shear in Beams	A18	Shear Capacity, Beams	How to determine spacing and size of stirrups
Shear in Beams	A19	Shear steel in Beams	Problem Worked in Video Beam Design for Moment Due
Continuous Construction Design Considerations/Serviceability	A20 A21	Problems	
Week 10			
Retaining Wall Types	A22	Excel Example	Chapter 8 – Walls H.O. Beam Design for Shear Due
Retaining Walls Part 1	A23	Retaining Wall	Chapter 7 H.O.
Retaining Walls Part 2	Q7		
Week 11			
Columns	A24	Columns Problems	
Term Project review			Review of Preliminary Drawings in Class
Columns			
Week 12			
Review for Exam 3			Column Design Due
Midterm Exam #3			
Footings	Q8		
Week 13			
Footings	A25	Footing Design	
Work on Project Report			Wall and footing designs due
Week 14			
Project Presentation			Project Presentation in class Final Drawings due; Final Project Report & Binder Due
Prestressed Concrete St. Croix Bridge	26	St. Croix Essay	St. Croix Bridge Construction Videos
Week 15			
Study day			
April 27 - 30 Finals Week			Final

Introduction to Instructor:

Instructor: Althea Arnold, PE, PhD

Office: RBS 1035

Office Hours: As posted outside my door

Phone: 903-566-7002

Email: aarnold@uttyler.edu

Spring 2021

Time: Lecture T TH 2:00 - 3:20pm

Online any time

Meeting Place: RBN 3040

I have lost count of how many times I have taught a Reinforced Concrete course to both Construction Managers and Civil Engineers. I have taught this course in both the face to face and hybrid formats. This year there will be a mix to provide classroom time where you will come to class and work problems with assistance. I have worked hard to provide you with short to the point videos for each topic and design method. I enjoy working with concrete and have experience designing and building with concrete for both building and bridge structures.

I have previously been on faculty at the University of North Texas and at Texas A&M. I am a Registered Professional Civil Engineer and have over 20 years' experience in the field, working in design and construction management. I have experience in residential, commercial, and heavy civil construction. I have worked in Texas, California, and Maryland. I have also performed research for Texas Transportation Institute in crash testing of highway hardware including concrete bridge rails.

I have a BS and MS in Civil Engineering specializing in structures (especially concrete) and a PhD in Construction Management all from Texas A&M. My specialties are in Building Information Modeling (BIM), Green Building and Robotics in Construction.

I enjoy teaching and like to challenge students to reach their full potential by involving them in the latest construction technologies. I expect students to be engaged in their own learning. I believe that the information, procedures, and techniques I provide students during the courses I teach will help them in the future to obtain and sustain professional and rewarding employment meeting their lifetime goals.

To help you, I am available to answer questions about the courses I am teaching, questions on your schedule and academic progress, student construction organizations, and employment opportunities. Please feel free to drop by my office during office hours, schedule an appointment, or send me an email. I look forward to teaching this class this semester.

Dr. A. Arnold

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.