

MEMORANDUM FOR STUDENTS ENROLLED IN CMGT 3315

SUBJECT: Construction Design Theory Administrative Instructions

1. Welcome to Construction Design Theory -- a key core course that continues to look at:
  - a. the equilibrium of structures and
  - b. the behavior of materials under various loading conditions

During the upcoming course, I believe you will find our study of Construction Design Theory in general to be interesting, challenging, rewarding, and fun!

We will meet *every Tuesday and Thursday* IAW the course schedule from **2.00 to 3:20** (see Encl 1). Room # HEC 0A218

Office hours: Monday, Wednesday: 12.30PM – 2.30PM, Thursday: 12.30PM – 2.00PM/ With appointment

2. I will teach based on the schedule in Enclosure 1. If you will miss a scheduled class, you are still responsible for turning in the homework assigned for that day and the material and you will not get the participation points available for each lesson unless I have given an authorized absence.
3. I teach every day in general -- always feel free to come by to see me IF I am in my office – BEST PRACTICE is to email me ahead of time to set up an appointment for when you would like to meet. My office hours are posted on my office door, HEC-A0221.

**4. Introduction to Construction Design Theory Course Objectives:**

5.

**A. Bending**

1. Draw shear and moment diagrams for a beam.
2. Determine normal flexure stresses ( $\sigma$ ) for a beam.
3. Determine the maximum elastic internal bending moment ( $M_{ME}$ ) for a beam.
4. For inelastic conditions, determine the partially-plastic internal bending moment ( $M_{PP}$ ) and the fully-plastic internal bending moment ( $M_{FP}$ ) for a beam.
5. Determine transverse shear stress at any point on a beam cross section.
6. Design a *prismatic* beam. ( A beam with a uniform cross sectional area)

**B. Beam, Deflections and Buckling**

1. Explain the elastic curve function for beam deflections.
2. Calculate beam deflections.
3. Calculate stresses in a member subjected to combined loading due to axial, torsional, internal pressure (i.e., thin wall pressure vessels), and/or bending forces.
4. Analyze/design columns.
5. Design connections
6. Use applicable codes to design members (LFRD)

Class Room Procedures:

- a. Bring study notes, textbook, note-taking material, and calculator to every class. Class preparation is your individual responsibility. NOTE: *Home work is mandatory and 5% of your final grade* – it will help your final grade!

**Note: I will often pick someone at random at the start of class to show how they accomplished the homework due that day – so be ready and be prepared.**

- b. MANDATORY Textbook: Statics and Strength of Materials for Architecture and Building Construction, Fourth Edition, Barry Onouye and Kevin Kane, (ISBN 0-13-507925-X).

*Note: I reserve 10% of the grade for Instructor participation grades.* Students are expected to:

1. Attend ALL class,
2. Participate in class lecture and homework review discussions,
3. Answer questions presented in class (to include in class board exercises)
4. be responsible for all material and announcements discussed in class.

6. Exams and Grading:

- a. Grade Breakout and Cutoffs:

<b>Course Points</b>	<b>Minimum</b>
Homework Problem Sets	(10%)
Exams (3 each)	(55%)
Quizzes (4 each)	(10%)
Design project	(15%)
Professional Grade	<u>(10%)</u>
Total	(100%)

If you get less than 65% as your final combined grade ***you will fail the course***. Remember in the department you need at least a C to move on to the next course. Note that final

grades are only A, B, C, D, F. ***I will return all graded exercise to you – keep track of them – with them you know what your cumulative grade looks like.***

***There is no way to ADD to or adjust a grade once an exercise is graded –the cumulative grade is the FINAL grade – there are NO adjustments made at end of course.***

## 7. How You Should Prepare for Lessons

1. **Study**: Construction Design Theory is as challenging as any course you will take here. When studying you should focus on accomplishment of the individual learning objectives listed for each lesson. This will normally include development of an understanding of the definitions of new words for each lesson as well as the assumptions, principles, and procedures used in solving the example problems.
2. **Use the Text**: ***Read and study the assignment in the text***, paying particularly close attention to the example problems, the principles, assumptions, and explanations made in the text.
3. ***Solve Problems – DO HOME WORK!*** **This is the absolute key to success in this course!** The more problems you work yourself, the better you will understand the principles involved. Problem sets are assigned throughout the course and ***must be completed and turned in for grade at the start of the class for which they are assigned.*** There is NO late homework!

8. Graded Events: All Graded Events to include unannounced pop quizzes are mandatory and becomes part of your grade -- ***failure to submit any required work will result in a 0 for that exercise.*** All work must be presented on the exam in a clear, logical, and professional presentation of your work, which is both accurate and correct – ALWAYS show ALL your work and ALWAYS start with the basic equation! If I cannot read OR follow your work it will be graded as a 0!

9. Late Submissions. Just like a real job –showing up to class is a real world obligation – there are no free classes. Anything not turned in by start of class is a zero. It is possible in extenuating circumstances to have A “COORDINATED LATE” submission which can be granted occur IF you contact me in advance. (That means at least 24 hours in advance except for real emergencies).

10. Students Rights and Responsibilities - please follow this link:  
<http://www.utt Tyler.edu/wellness/StudentRightsandResponsibilities.html>

11. Grade Replacement/Forgiveness. If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

12. 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 12th day of class (See Schedule of Classes for the specific date). Exceptions to the 6-

drop rule include, but are not limited to, the following: totally withdrawing from the university; being administratively dropped from a course; dropping a course for a personal emergency; dropping a course for documented change of work schedule; or dropping a course for active duty service with the U.S. armed forces or Texas National Guard.

Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

13. Disability Services. In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact Ida MacDonald in the Disability Support Services office in UC 282, or call (903) 566-7079. **You MUST contact me for accommodation needs.** I will not contact you first.

14. Student Absence due to Religious Observance. Students who anticipate being absent from class due to a religious observance are requested to inform the instructor in advance for an excused absence and late submission of work.

15. Student Absence for University-Sponsored Events and Activities. If you intend to be absent for a university-sponsored event or activity, you and the event sponsor request must notify me at least two weeks prior to the date of the planned absence.

16. 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.

17. 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.

Amjad Hossain, P.E.

Initial Course Schedule: (Subject to change as needed throughout the semester)

Lecture#	Date	Day	Materials Covered	Reading	HMWK Due
1	August 24	T	Course Syllabus & Key 3310 Concepts Review		Canvas Homework Sheet -1 <sup>st</sup> three prob due today
2	26	TR	Key 3310 Concepts Review	CH 1-6	2.9,.12,.15.18 & 3.12
3	31	T	Shear and Bending Moment Diagrams I	CH 7	7.1,.2,.3,.4
4	September 2	TR	Shear and Bending Moment Diagrams II	CH 7	7.5,.6,.10,.12
5	7	T	Exam #1 – V and M	CH 1- 7	
6	9	TR	Elastic Bending I	CH 8.1	Prob 8.1 pg 371 and 8.4 pg 374
7	14	T	Elastic Bending II	CH 8.2	8.2, 8.3,8.6 pg 379
8	16	TR	Inelastic Bending by Equilibrium	CH 8.3-4	8.11,.12,.13
9	21	T	Deflection in Beams	CH 8.5	8.14,.15 text and 8.15, .21,.22,.23
10	23	TR	Lateral Buckling and LRFD Equations	Sec 8.6, 8.7	Text example 8.19 and 8.20
11	28	T	Flexural Stresses & Design for Bending	8.7 pg 472-431	Text example 8.21
12	30	TR	Design for Bending	8.7 pg 432 -435	Text example 8.22, .23
13	October 5	T	Exam Review	CH 8	
14	7	TR	EXAM #2		
15	12	T	Team Building Deck Design Project		
16	14	TR	Team Building Deck Design Project		
	19	T	Spring Break		
17	21	T	Team Building Deck Design Project Presentation		
18	26	TR	Column Buckling I	CH 9.1,9.2	9.1,.2.3,.4
19	28	T	Column Buckling II	CH 9.3 to pg 466	9.8,.10
20	November 2	TR	Column Design I	CH 9 pg 467-472	9.12,.13
21	4	T	Column Design II	CH 9.4	9.16
22	9	TR	Exam #2 Review		
23	11	T	Exam #2		

24	16	TR	Connections	CH 10 pg 494 to 512	10.1,.2,.3,.4,.5
25	18	T	Connections	CH 10 pg 513 -518	10.7, .8
26	23	TR	Connections Review	CH 10	
27	25	T	Exam #3		
28	30	TR	End of Course Evals		
	December 2	TR	FINAL EXAM		