

**COURSE SYLLABUS**  
**The University of Texas at Tyler**  
*College of Engineering*  
**Department of Civil Engineering and Construction**  
**Management**  
**CMGT3315 – Construction Structural System II**  
**(3 Credit Hours)**

**Instructor:** Dr. Ahmad Jibreen

**Email Address:** [ajibreen@uttyler.edu](mailto:ajibreen@uttyler.edu)

**Office #:** RBS1037

**Office Hours:** Tuesdays – Thursdays 03:30 PM – 5:00 PM

Mondays – Wednesdays 12:30 PM – 3:00 PM

**Course Number, Section Number, and Course Title:**

- CMGT 3315 – 001 (lecture), Construction Structural System II

**Time and Place of Class Meetings:**

- Lecture 001 Mondays, Wednesdays, and Fridays 11:15AM – 12:10 AM, Room RBN 3040

**Description of Course Content:** This course is designed to provide an overview of engineers and managers in the application of construction projects. Topics include types of Shear, Bending, Stress, and strain.

**Course Objective:** CMGT 3315 is a follow-on core course that continues to look at the strength of materials and the principles of flexure, shear, and deflections that are key to the safe design and building of ALL construction projects. We will now apply these basic construction engineering principles to WOOD as the primary building material. This course will also introduce the application of Building Information Modeling BIM system that we started in 3305 and 3310.

**Student Learning Outcomes:** Upon completion of the course, the student will have:

**A. Internal Stress**

1. Draw shear and moment diagrams for a wooden beam.
2. Determine normal flexure stresses for a wooden beam.
3. Determine the maximum elastic internal bending moment (MME) for a wooden beam.
4. For inelastic conditions, determine the partially plastic internal bending moment (MPP) and the fully plastic internal bending moment (MFP) for a wooden beam.
5. Determine transverse shear stress at any point on a wooden beam its total cross section.
6. Design a prismatic wooden 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 and/or bending forces in a loaded wooden beam.
4. Analyze/design wooden columns.
5. Design connections for wood structural elements with bolts and nails.

**Textbooks Adopted:**

1. Statics and Structural Strength of Materials for Architecture and Building Construction (4th Ed.) by Barry Onouye and Kevin Kane (ISBN 978-0-13-507925-6)

**Descriptions of major assignments and examinations with due dates:** There will be three exams (two are the midterms, and one final exam, which will be comprehensive), one project, and several homework assignments. Among Exam 1, 2, and Final Exam. See Course Outline for specific dates. **The three on-campus exams must be taken during the time specified in the course schedule, and term project presentation must be delivered in person and on campus.**

**Grading Policy:** Grades will be determined according to the following scale (the grading scale may be lowered at the discretion of the instructor, but will not be raised):

Letter Grade	% Required
A	90 -100
B	80-89
C	70-79
D	60-69
F	Less than 60

Students will be required to accumulate points from the following percentages:

Course Component	Percentage
Quizzes	10%
HomeWorks	10%
Term Project	10%
Exam 1	20%
Exam 2	20%
Final Exam	30%
<b>Total</b>	<b>100%</b>

**Note:**

- **You may fail this course, if you earn less than 65% on all Exams or if you fail to earn at least 50% on the Final exam, regardless of your course grade.**

**Attendance:** **ALL in-class students are expected to attend 001 the on-campus lecture and in-person regularly.** During the lecture, no electronic devices are allowed.

**All works must be uploaded to the Canvas by the due date. No work will be accepted via the email system. Late work will NOT be accepted unless permission is given by the instructor prior to the due date.**

All students should reply to the instructor’s emails as soon as possible to answer his questions and facilitate constant communication. They can also send their questions to the instructor via email.

**Final Project**

Project will be given. All students are to work on them individually using class design parameters set in the course. The final project tests your ability to work as a team as well as your ability to use the techniques discussed in the course to provide an accurate takeoff and binder.

**Quizzes:**

The instructor will give unannounced in-class or take-home quizzes throughout the semester.

**Make-up Exams:** All students must take the exams during the time specified in the course schedule. Only extenuating circumstances will be accepted as excuse for missing the exam. Health related excuses require **medical reports and the signature of a licensed physician** who provided treatment.

#### **GENERAL EXAM RULES & CHEAT SHEET**

- All exams are closed book. You are only allowed to bring your writing instruments, erasers, and NCEES approved calculators. Topics to be tested will be announced in class and on Canvas one week prior to the exam.
- The instructor will set questions from material taught in class. The meaning of “taught in class” includes verbal instructions or written notes on the white board and Canvas, briefing/ presentation during field trips, observation during field work/ experiments. They do not necessarily appear in the textbook, distributed class notes, or homework. It is very important that you attend the class activities and take additional notes.
- To discourage students from focusing narrowly on only a few questions, no practice exam will be given. There are enough self-practice problems in the textbook at the end of each chapter.
- The Exam is not a group work and if any student is caught cheating, both will be given an “F” for the exam

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

**Drop Policy:** Students need to consult UT Tyler Web site for information on the university drop policy.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. Classes are held as scheduled during this week and lectures and presentations may be given.

#### **Classroom Procedures:**

- I will take a quiz every class.
- It is a basic principle of professionalism that “Professionals are not Late.” Please come to class on time and leave on time. Interruption of lecture is not acceptable.
- Bring study notes, textbook, note-taking material, and calculator TO EVERY CLASS. You may not borrow or exchange calculators during graded events. If your calculator fails during a graded exercise, I am not responsible for furnishing a substitute. Class preparation is your individual responsibility. Please refer to the Calculator Policy.
- No food or snacks in classrooms and Labs.

#### **Laptops/Pads/Mp3 Players/Cell Phones or Other Electronic Devices:**

- The use of any electronic device, except an approved calculator, is not permitted during exams. Your exam will be collected, and your grade will be a zero if you are caught using a non-approved electronic device/calculator. Any instances of a calculator inappropriately used during an exam will be the basis of alleging Academic Misconduct and may result in Failing (F) of the course at the determination of the course’s instructor or the basis for a recommendation for expulsion from the University. Any Calculator used during an exam in this course must meet the requirements stated within the policy below.
- Use of cell phones during class time is not permitted.

#### **Calculator Policy:**

Only NCEES approved calculators will be permitted during tests and your test will be collected and your grade will be a zero if you are using a non-approved calculator.

The approved calculators include the following: (Please check the NCEES website for a complete listing, [www.ncees.org/exams/calculator-policy/](http://www.ncees.org/exams/calculator-policy/). Examples include but are not limited to:

- Hewlett Packard – HP 33s, HP 35s, and no others
- Casio – All FX 115 models
- Texas Instruments – All TI 30X or TI-36X models.
- If you are unsure about your calculator, it is your responsibility to check with the instructor for approval.

At the discretion of the course instructor, any calculator not meeting the requirements stated (especially in the case of a graphing calculator) may be used but only after an inspection of the device and a clearing of all the memory within the device, performed for the instructor at a time immediately prior to the exam. At any time during the exam your calculator is subject to a random search by the instructor. Failure or refusal to clear all memory or to surrender your calculator to search will disqualify you from the exam immediately, unless you can produce a calculator meeting the requirements as stated above.

**Final Day to Withdraw:**

The final day to withdraw from the course is November 4th

**Census Dates:**

The university requires that instructors report the attendance to the register at various points in the semester. Therefore, on September 9<sup>th</sup>. I will report the attendance for the class.

**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.

**Information For Classrooms and Laboratories:**

Students are strongly encouraged to wear face masks covering their nose and mouth in public settings (including classrooms and laboratories). The UT Tyler community of Patriots views adoption of these practices consistent with its Honor Code (Links to an external site.) and a sign of good citizenship and respectful care of fellow classmates, faculty, and staff.

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher-than-normal temperature should stay at home and notify their faculty. Students needing additional accommodation may contact the Office of Student Accessibility and Resources at University Center 3150, or call (903) 566-7079 or email saroffice@uttyler.edu.

**Recording Of Class Sessions:**

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in this course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

**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.

**Collection of Student Work:**

Throughout the semester I will collect student work (best, average, and worst) for the ABET 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. I will not pay attention as to what level of work you accomplished.

**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/StudentRightsandResponsibilities.php>

**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. 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 is the deadline for many forms and enrollment actions that students need to be aware of.

These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses such 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

### **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 Tyler at Texas offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a 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 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 have 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 SafeAssign™, available on Blackboard. UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- UT Tyler Tutoring Center (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)
- The Mathematics Learning Center, RBN 4021, 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 (903.566.7254)

#### **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](http://www.uttyler.edu/tobacco-free).

#### **Campus Carry:**

We respect the rights 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/campuscarry/index.php>.

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**CMGT3315– Construction Structural System**  
**TENTATIVE COURSE OUTLINE**

Day	Date	Topic	General Description	Reading Assignment	Assignments
<b>Week 1</b>					
M/W/F	August 26, 28, 30	<ul style="list-style-type: none"> <li>Introduction to the class</li> <li>Course Introduction</li> </ul>		Chapter 1 & 2	NA
<b>Week 2</b>					
M/W/F	September 2, 4, 6	<ul style="list-style-type: none"> <li><b>Monday NO class (Labor Day)</b></li> <li>The Arch</li> </ul>		Chapter 3	TBA
<b>Week 3</b>					
M/W/F	September 9, 11, 13	<ul style="list-style-type: none"> <li>Load tracing</li> <li>Idealized framing and bracing</li> </ul>		Chapter 4	TBA
<b>Week 4</b>					
M/W/F	September 16, 18, 20	<ul style="list-style-type: none"> <li>Stress and Strain</li> </ul>		Chapter 5	TBA
<b>Week 5</b>					
M/W/F	September 23, 25, 27	<ul style="list-style-type: none"> <li>Centroid and moment of inertia</li> </ul>		Chapter 6	TBA
<b>Week 6</b>					
M	Sept 30	September 30, Oct 2 Catching up and review session			
W/F	Oct 2, 4	<b>October 4 Exam 1</b>			
<b>Week 7</b>					
M/W/F	October 7, 9, 11	<ul style="list-style-type: none"> <li>Bending and Shear in Beam</li> </ul>		Chapter 7	TBA
<b>Week 8</b>					
M/W/F	October 14, 16, 18	<ul style="list-style-type: none"> <li>Shear and Bending Moment</li> <li>Elastic Bending</li> </ul>		Chapter 8	TBA
<b>Week 9</b>					
M/W/F	October 21, 23, 25	<ul style="list-style-type: none"> <li>Inelastic Bending and Deflection in Beam</li> <li>Lateral Buckling and Flexural.</li> </ul>		Chapter 8	TBA
<b>Week 10</b>					
M/W/F	Oct 28, 30 Nov 1	<ul style="list-style-type: none"> <li>Column Buckling I and II</li> <li>Column Design I and II</li> </ul>		Chapter 9	TBA

<b>Week 11</b>		
M/W/F	November 4, 6, 8	November 4, 6 Catching up and review session <b>November 8 Exam 2</b>
<b>Week 12</b>		
M/W/F	November 11, 13, 15	• Project Preparation
M/W/F	<b>November 15</b>	Term project and presentation slides (all in PDF) must be submitted to Canvas by 11:59PM.
<b>Week 13</b>		
M/W/F	November 18, 20, 22	<ul style="list-style-type: none"> <li>• Term Project Presentation (no regular classes)</li> <li>• A timeslot will be assigned to each student. (Max 10 min. presentation and then 5 min. Questions)</li> </ul>
<b>Week 14</b>		
M/W/F	November 25, 27, 29	<b>NO Classes THANKSGIVING HOLIDAYS</b>
<b>Week 15</b>		
M	December 2	Final Exam Review
<b>Week 16</b>		
	<b>December</b>	<b>Final Exam at</b>

**As the instructor for this course, I reserve the right to adjust this syllabus in any way that serves the educational needs of the students enrolled in this course -----Dr. Ahmad Jibreen**