

**Instructor:** Sk Amjad Hossain, P.E.  
Email: shossain@uttyler.edu

Office Hours:  
As mentioned in front of my office  
or, by appointment  
HEC Room A221/Online/Email

**Lectures:**

MWF 9.05 am-10.00 am, Room # HEC-0A216/RBN-03039/Online (ZOOM ID and password will be emailed to the students)

1. Welcome to ***CMGT 3310 Construction Structural Systems I*** (Statics) -- the first of a two course series covering construction systems. During the upcoming semester you will find our study of Statics and Construction Systems to be interesting, challenging, and rewarding **and** it is a critical skill you will use for the remainder of your professional careers in engineering and construction.
2. We will meet according to the course schedule shown on the last page. The schedule also shows the course topics.
3. The following are course competencies you will be evaluated on:
  - a. **Communication Skills**—the student will help develop their communication skills by presenting homework and test solutions.
  - b. **Problem Solving (Critical Thinking)**—the student will use lecture and demonstration to foster conceptual thinking skills, drawings, bid proposals and learning project standards and specifications.
  - c. **Personal Accountability for Achievement**—the student will complete the assigned projects at the time designated by the instructor and will demonstrate on both exercises and exams that they have learned the material presented.
  - d. **Competence in Technology Principles**—competence in construction and engineering principles and it's application to construction management processes and practices.
4. **Course Objectives:**
  - a. Understand the basic principles of engineering mechanics.
  - b. Apply these mechanics (statics) to building systems problems
  - c. Be able to use Free Body Diagrams in analysis of problems.
  - d. Solve problems using Method of Joints and Method of Sections for simple trusses.
  - e. Solve for the centroid and Moment of Inertia at any point in any structural element.
  - f. Determine the internal forces in a structural element under loads (axial, shear, moment, torque)
5. Students are expected:
  - a. to attend all classes.
  - b. It is the student's responsibility to obtain any missed class notes, handouts, assignment due dates and any other information missed for any reason.
  - c. Failure to attend class does not constitute withdrawal from class.
  - d. All material covered in class lectures, in homework assignments, and in the text or in any additional material contained in class handouts (including the syllabus) is considered to be testable material.

- e. You are encouraged to seek additional instruction before, during, and after class or by one on one help with me by setting up by appointment.
- f. Learning to communicate in a timely manner is a key professional skill you must develop to be successful in your career. We will start this communication skills training process using the situations that arise in this class. Note: If you LATE or miss entirely any class without prior notification and **approval** at least 24 hours in advance of class there is **no makeup process** -- it will also lead to a 0 for any work assigned in that class time (same as a late assignment)

6. Classroom Procedures:

- a. Bring study notes, note-taking material, and TEXT BOOK to every class. Class preparation is your individual responsibility.

The Textbook for this class is: *Statics and Structural Strength of Materials for Architecture and Building Construction* (4<sup>th</sup> Ed.) by Barry Onouye and Kevin Kane (ISBN 978-0-13-507925-6 **YOU MUST HAVE THIS BOOK FOR CLASS – there will be a textbook check in class for a grade!**)

- b. If homework has been assigned it is due at the start of class – anything turned in after class starts is LATE with a 20% dock in grade. Class begins with a presentation on the topics of the day.
- c. Students practice skills by DOING ALL YOUR HOMEWORK and by tests in class.

7. **Electronic Devices Policy**

**Laptops/PDAs/MP3 players/Cell Phones or other electronic devices**

- **The use of any electronic device, except an approved calculator, is not permitted during class OR exams.** Using a non-approved electronic device or non-approved calculator will result in Failing (F) grade for 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.
- **Calculator Policy**  
**Only NCEES approved calculators will be permitted during tests.** Please check the NCEES website for a complete listing, [www.ncees.org/exams/calculator-policy/](http://www.ncees.org/exams/calculator-policy/). If you are unsure about your calculator, it is your responsibility to check with the instructor for approval.

8. Course Points

Midterm Exams (02 nos)	(30%)
Professional Practice Grade	(10%) **
Homework	(15%)
Final Exam	<u>(45%)</u>
Total =	(100%)

NOTE: as we progress in the course we may need to change the schedule and the grading assignments – **the grading scale will be adjusted** to accommodate for these changes.

I will give back all assignments with grades on them and I post grades at the same time in CANVAS. You will always know where you are in a grade by keeping these tests and looking at CANVAS. See me if you need to know where you are in the grade process.

Once the grades are posted you have 24 hrs to dispute a grade. IF you do not dispute a grade I will not adjust it after the discussion window (24 hrs or by next class).

#### 9. **Graded Events:**

All Graded Events are mandatory and become part of your total class grade and are due at START OF THE CLASS. Failure to submit any required work **will be graded as a 0 grade**. As a professional engineer your goal is to make a clear, logical, and professional presentation of your work **ready at the due date and time** – so it is here. As such both the quality of your presentation and the accuracy of your work are important, and both will be graded.

#### 10. **Late Submissions.**

It is a basic principle of professionalism that “Professionals are not late.” A “COORDINATED LATE” submission occurs when you will miss the required date for an assignment and you contact me **in advance for a real emergency or serious reason**. Coordinated late submissions means you contacted me at least 24 hours **before** the due date **to request approval** of the absence from the assignment.

\* An approved absence from the class does not have any grade impacts. Make up work may be developed for an approved absence.

11. **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.html>

#### 12. **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. Representation of other’s work as your own work OR failure to notate that someone helped you and assignment will not be tolerated. Cheating on examinations, quizzes, and homework and the false representation of any class work as being done by you will be interpreted as academic dishonesty. Academic dishonesty will be subject to disciplinary action as outlined by the UT Tyler Student Guide on Conduct and Discipline

#### 13. **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>

#### 14. **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.

15. **The Census Date** 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

#### 16. **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.

17. **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.

#### 18. **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.

#### 19. **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.

## **20. 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.

## **21. 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.

**22. 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 administering 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 administering 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 un-administered 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 un-administered test, test key, homework solution, or computer program or information about an un-administered 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 – Houston Engineering Center, 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 Canvas.

### 23. UT Tyler Resources for Students:

- UT Tyler Writing Center (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu), <http://www.uttyler.edu/writingcenter/>
- UT Tyler Tutoring Center (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu), <https://www.uttyler.edu/tutoring/>
- 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 (903.566.7254) <https://www.uttyler.edu/counseling/>

24. **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.

25. **Tobacco-Free Campus.** To promote the health, well-being and safety of university students, faculty, staff and visitors, UT Tyler will become a tobacco-free campus. Beginning Aug. 15, 2016, all forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This includes, but is not limited to: cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco and all other tobacco products. This policy applies to all members of the university community, including students, faculty, staff, university affiliates, contractors and visitors. Adherence to the policy will be the responsibility of all members of the university community. All students, faculty, staff, university affiliates, contractors and visitors to campus will be expected to comply with the policy. For more information about UT Tyler becoming a tobacco-free campus, see the [Tobacco-Free FAQ page](#).

Sk Amjad Hossain, P.E.  
Lecturer  
2811 Hayes Rd.  
Room # A221  
Houston, TX 77082  
[shossain@uttyler.edu](mailto:shossain@uttyler.edu)

<b>COURSE SCHEDULE -Spring-2025 semester (Subject to change as needed throughout the semester)</b>			
<b>CMGT 3310 Basics of Engineering Mechanics --Statics</b>			
<b>Lesson No.</b>	<b>Date</b>	<b>Topic</b>	<b>Lesson Material</b>
1 & 2		Syllabus - Classroom Rules -- Topic Intro Forces and Vectors	Read Chapter 1 Read Chapter 2 pg 15 - 40
-			-
3 & 4		Forces and Vectors Equilibrium and Free Body Diagrams	Read Sec 2.3: pg 42 - 60 Read Sec 2.4: pg 61 - 73
5 & 6		Equilibrium and Free Body Diagrams Static Indeterminacy and Loads	Read Sec 2.5: pg 74 – 85 Read Sec 2.6: pg 86 - 95
-		<b>EXAM #1</b>	-
7 & 8		Equilibrium, Loads, and Trusses (Cable Systems) Equilibrium, Loads, and Trusses (Distributed Loads)	Read Sec 3.1: pg 96 – 110 Read Sec 3.2: pg 111 - 118
9, 10 & 11		Equilibrium, Loads, and Trusses (Stability and Analysis by Joints) Equilibrium, Loads, and Trusses (Analysis by Sections)	Read Sec 3.3: pg 119 – 138 Read Sec 3.4: pg 139 - 145
12 & 13		Equilibrium, Loads, and Trusses  Load Paths	Read Zero Force Members: pg 150 - 152 Read Chap 4: pg 197 - 212
-		<b>EXAM #2</b>	
14		Stress and Strain	Read Secs: 5.1-5.4 pg 251 - 292
15		Centroids and MOI	Read Secs: 6.1-6.4 pg 300 - 331
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16		Bending and Shear in Simple Beam	Read Secs: 7.1–7.4 pg 332 - 344
17		Course Wrap Up	
-		<b>Final Exam</b>	-

**Key Additional Student Information:**

**Additional Syllabus Information**

**Important Covid-19 Information for Classrooms and Laboratories**

Students are required to wear face masks covering their nose and mouth, and follow social distancing guidelines, at all times in public settings (including classrooms and laboratories), as specified by [Procedures for Fall 2020 Return to Normal Operations](#). The UT Tyler community of Patriots views adoption of these practices consistent with its [Honor Code](#) 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 will be excused from class and should stay at home and may join the class remotely. Students who have difficulty adhering to the Covid-19 safety policies for health reasons are also encouraged to join the class remotely. Students needing additional accommodations may contact the Office of Student Accessibility and Resources at University Center 3150, or call (903) 566-7079 or email [saroffice@uttyler.edu](mailto: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.