

SUBJECT: Construction Applications for Steel

1. Welcome to CMGT 4315 (Construction Systems): Application of statics and strength of materials for construction of steel buildings with computer analysis and design of specific topics.
2. We meet every Tues and Thur from 9.30 am to 10.50 am in HEC 0A216
3. In CMGT 4315-031 will focus on the use of *steel as a material* in structural construction systems.
4. **Homework will be required** according to the course schedule attached. I will use Canvas to supplement class material as necessary.
5. **Course Objectives:**
  - Understand the concepts of load and resistance factor design (LRFD) for steel structures.
  - Know how to prepare calculations to support steel design.
  - Understand the mathematical concepts for choosing structural steel members.
  - Know how to calculate the required sizes for structural steel columns, beams, and tension members.
  - Know how to calculate weld and bolt sizes for steel connections.
  - Demonstrate mastery of these principles by designing and building a metal welding shed

The following are course competencies:

- a. **Skilled Communicator**—the student will exhibit mastery in communicating thru exercises in explaining work results and assigned class exercises.
- b. **Interpersonal Skills**—the student will display team work skills in assigned group exercises.
- c. **Solving Problems (Critical Thinking)**—the student will use lecture and demonstration to foster conceptual thinking quantitative/statistical skills, in making drawings according to specifications.
- d. **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 he has learned the material presented.
- e. **Technology Competence** - Competence in structural systems and engineering principles learned and in the application to construction management processes and practices.

**Students are expected to attend all class lectures.** It is a professional responsibility to always be at all scheduled events on time. This applies to these 4315 lectures. **Never be late. Never miss a lecture!** IF you must be late email me before class and ask to be given an Authorized Excused Absence. To fail to get this authorized absence **will result in your receiving a ZERO for any grade due that day.** There is **NO MAKEUP process** without an authorized excused absence.

Excused Absence guidance: It is the student's responsibility to obtain any missed class notes, handouts, assignment due dates and any other information missed for any reason.

You are encouraged to seek additional instruction before, during, and after class or by one on one help set up by appointment. My office is in room HEC 0A221. My email is [shossain@uttyler.edu](mailto:shossain@uttyler.edu). Email is the

best way to get a hold of me. You can also call my office. Feel free to drop by and if I am not already tied up with another student, I would be glad to help. Making an appointment will help ensure your get the time you need. Communicating in a timely manner is a key professional skill.

My office hours: Mon., Wed. – 12.30pm to 2.30 pm and Fri.-9.00am to 11.00 am.

**Note:** 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 testable material.

6. Classroom Procedures:

- a. Bring TEXT, homework and study notes, note-taking material, and calculator to every class. Class preparation is your individual responsibility.
- b. Class begins with a presentation on the topics of the day.
- c. Students practice skills in class by a quiz or by review of homework assigned.
- d. In class assignments for same day submittal will be given as we go thru the material.
- e. Textbook: *Steel Design* (5<sup>th</sup> Ed.) by William T. Segui (ISBN 978-1-111-57600-9)
- f. **There are NO restroom breaks in class or exams! Be forewarned!**

g. 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 exams. **PHONES are never permitted to be used in class for any reason!** If you are found using a non-authorized electronic device your exam will be collected and your grade will be a zero. 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:

**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/)).

6. Exams and Grading:

**a. Course Points**

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Exams (03 numbers, two Midterm and 01 Final exam)	(60%)
Dean Conway Project Leadership (Welding Shed)	(30%)
Quizzes/ Professional Practice	<u>(10%)</u>
	100%

You will always know where you stand for your grade. *I will return all graded exercise to you quickly – keep track of them – I will also post grades in Canvas so can see what your cumulative grade looks like. If you do not agree with a posted grade see me ASAP –right after they are posted. DO NOT bring a disputed grade to me if **that grade has been posted for more than 14 days**. DO NOT wait till the last week of the course to talk about how to improve or salvage a poor grade. This is a cumulative process – not a single event.*

**Note: There is no way to ADD to your 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:

**DO the HOMEWORK assigned!**

- The Course Text: You will find the illustrations in the optional text to be very informative and the numerous examples very practical and straight forward.
- Solve Problems: This is the absolute key to success in this course! The more problems and assignments you complete doing the work yourself, the better you will understand and master the principals involved.

**Note:** Problem sets are assigned throughout the course and may be required from time to time to be and turned in for grade.

- Assigned readings. Doing the assigned reading prior to class and do the assigned HOMEWORK problems! These two steps are the most important to help you to understand the material presented during the instruction lecture. Reading and homework will fill in gaps for things we do not cover in class. (**I cannot and most likely will not cover everything in the reading assigned during the lecture!**). It will also make you more familiar with terms and concepts to be covered.
- There may be **unannounced quizzes** that cover assigned sections of the text.

**8. Graded Events:** All Graded Events are mandatory and become part of your grade. Note that failure to submit any required work will result in a 0 for that assignment.

Note: As an engineer your primary means of communication is thru written plans, calculations, and memos. It is an absolute *imperative that engineers be able to make a clear, logical, and professional presentations of your work, which is both easily followed, accurate, complete, and correct. This skill starts with your exams and quizzes in this class. Every problem must have:*

ALL WORK MUST BE SHOWN TO BE CONSIDERED FOR CREDIT –final answer does not count as full credit – *credit is given for degree of work shown!* –problems with only a final answer are graded as a 0!

Every problem solution *begins with the generic equation* selected to be used in its basic form and then all steps are shown to the final answer

*Flow of solution* must be clear and laid out in easily followed steps of completion.

Your writing us be legible, readable, and complete with UNITS!

All final answer must be marled as “ANS” – solutions without the solution labeled will be considered for grade even if present and unlabeled –to include final units! It is not my task to search for your answers in a problem!

NOTE: an exam is an assessment of your ability to understand, design, and propose a solution to a given problem. I will not make any assumptions or fill in the blanks for your answer. The solution is either complete or incomplete –if incomplete it will be graded as a partial answer with a grade proportional to my rubric of completeness! There is no form of debate or rebuttal to my grading of a problem. My grade is final.

*You will not be given a graded exercise back for you to keep a copy of. You are not authorized to make copies of any exam nor should you share or be in possession of any prior exams or quizzes! Possession of or use of prior exam material is considered an HONOR CODE violation in 4315! You will be given and honor code statement to this effect before each exam!*

**9. Late Submissions.** It is a basic principle of professionalism that “**Professionals are not late.**” A “COORDINATED LATE” submission occurs when you inform me of a reason why you think you will miss the required date for an assignment and you contact me at least 24 hours in advance with this request! I may require you to provide information from your doctor or other sources for approval of the absence from the assignment. All COVID related medical issues MUST be coordinated thru the University COVID hotline!!! Medical issues not approved by the university as authorized excuses for any medial issue will not be approved by me!

**10. 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>

### **11. 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 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

### **12. 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>

### **13. 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 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.

**14. 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

### **15. 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.

### **16. Disability Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning,

physical and/or psychiatric disabilities. If you have a disability, including non-visible disabilities such as chronic diseases, learning disabilities, head injury, PTSD or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with the Accessibility Case Manager/ADA Coordinator, Cynthia Lowery Staples. If you are unsure if the above criteria apply to you but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to [cstaples@uttyler.edu](mailto:cstaples@uttyler.edu). YOU MUST contact me for any accommodations –I will not contact you. Failure to contact me will result in NO accommodations for your case!

### **17. 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.

### **18. 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.

### **19. 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.

### **20. 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.

**21. 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 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, 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.

## 22. 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/>
- UT Tyler Counseling Center (903.566.7254) <https://www.uttyler.edu/counseling/>

**23. 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.

**24. 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](#).

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**CMGT 4315-031 Course Schedule (Subject to changes during semester)**

Dat	Lesson	Material Covered	Reading	Assignment
1/10	1	Syllabus and Precision,	CH1	1.5-1,-3,-4
1/12	2	Steel Design Concepts & LFRD	CH 2 pg 21-39	
1/17	3	Tensile Strength	3.1 & 3.2	
1/19	4	Effective Area	3.3	
1/24	5	Staggered Fasteners	3.4	
1/26	6	Block Shear	3.5	
1/31	7	Selection of Tension Members	3.6 to pg 69	
2/2	8	Tension Members TEST #1	CH3	
2/7	9	Compression Members	CH 4 Pg 109-121	4.3-1,-2,-3
2/9	10	Local Stability of Columns	Pg 121 4.4 to EX 4.3 then 4.5, SKIP 4.6, then 4.7 to EX 4.9 pg 140	
2/14	11	Test # 2 Compression Members	CH4	
2/16	12	Beams Member	CH5.1 to 5.3	5.2-1,-3,-4
2/21	13	Bending strength of beams	CH5.4, 5.5 to pg 201	5.4-1,-2 5.5-1,-2
2/23	14	Shear Strength of Beams	5.8 p216-222	
2/28	15	Block Shear and Deflections in Beams	pg 222 to 226 EX 5.8 and 5.9	
3/2	16	Selection of Beams	5.10	EX 5.10
3/7	17	Holes in Beams Members	5.12 to pg 247	5.12-1,-2,-3
3/9	18	Test #3 Beams	CH 5	
3/21	19	Ch 7 Bolted Connectors/ Shear	CH 7.1 to 7.2	
3/23	20	Edges,Spacing	7.3	7.3-1,-2
3/28	21	Shear Strength	7.4 to pg 401	7.4-2,-3
3/31	22	Test #4 Bolts	CH 7	

4/4	22	Welds 7.10 to EX 7.12	Pg 441 to 449	7.6-5
4/6	23	E70 and Standards ex 7.13	Pg 449 to 456	7.11-1,-2,-3,-4
4/11	24	Weld Test #5		
4/13	25	Project Prep		Project Sheet Canvas
4/18	26	"		
4/20	27	Project Turnover		