

University of Texas at Tyler - Department of Civil Engineering
CENG 4318_5318_5399 ~ Design Timber Structures
Spring 2020

Instructor: Shariful Huq Office Hours:
HEC A204 MTWR: 1:30PM-3:30PM or By Appointment
shuq@uttyler.edu

Lectures:

Monday & Wednesday: 10:10 AM-11:30AM, HEC A218

Course Website:

Canvas will be used when necessary to manage the course material for the semester. There you will find homework assignments, solutions, handouts and other material pertaining to the class.

Please check there regularly.

Catalog Description:

Course develops analysis and design concepts for the design of wood and timber structures.

Learning Objectives:

1. Introduction to wood, physical and mechanical properties of wood and wood products.
2. Loads on structures.
3. Loads on structures and NDS (ASD/LRFD) Specifications.
4. Beams and Columns.
5. Beam - Columns.
6. Trusses and Frames.
7. Glulam.
8. Plywood.
9. Shear walls and Diaphragms.
10. Connectors and fasteners.
11. Concrete form work.
12. Design case study.

Prerequisite:

CENG 3306: Mechanics of Materials and CENG 3325: Structural Analysis

Text Books:

- (i) Design of Wood Structures ASD/LRFD, Eight Edition, Donald E. Breyer, Kelly E. Cobeen, and Zeno Martin; McGraw-Hill 2020, ISBN-13: 978-1-260-46117-6
- (ii) 2018 Wood Design Package – NDS for Wood Construction, 2018 Edition; NDS Supplement: Design Values for Wood Construction, 2018 Edition and Special Design Provisions for Wind and Seismic, 2015 Edition

- (iii) ASCE 7-10 (3rd printing) – Minimum Design Loads for Buildings and Other Structures

Supplemental Books:

- (i) International Building Code (IBC) 2012 Edition
- (ii) Wood Handbook Forest Products Laboratory 2010
- (iii) Timber Construction Manual AITC 5th Edition

Exams:

There will be 2 midterm examinations and one final examination. The exams are **TENTATIVELY** scheduled for:

Exam 1: **To Be Announced**

~~Exam 2: **To Be Announced**~~

Final Exam: April 27th ~ May 2nd (**To Be Confirmed When Schedule is Released**)

Exams dates may be moved up or pushed back depending on the progress of the lectures. Exams are closed book. You can use a calculator and instructor approved reference sheets. **Solutions to exams may NOT be posted on canvas.** **THERE ARE NO MAKE-UP EXAMS GIVEN WITHOUT AN EXCUSED ABSENCES.** A note from a medical professional is required for any absence due to illness.

Exam Rules

Exams will be conducted according to the exam rules posted on Canvas.

Homework:

Homework will be assigned on regular basis. Homework is due on the date assigned at the beginning of lecture. **No late homework will be accepted.** **Homework solutions will be posted on canvas.** Homework should be submitted on engineering paper (preferred) or plain white printer paper. Solutions should be presented in a clear methodical manner. Follow the “homework submission guidelines” when completing your assignment. **Assignments which are not clearly presented may have 5 percentage points deducted from the overall grade of that assignment.** *Be sure that you use the correct edition/version of the textbook. Problems done from other edition/versions which do not match the assigned problems will not receive credit.*

Homework Submission Guidelines (Professionalism Requirements):

1. Homework should be submitted using letter size (8 ½ x 11”) paper. Engineering paper is preferred but plain white paper is allowed if you have no access to engineering paper.
2. The header of the first page should include the following:
 - a. Name of Student
 - b. Student Number
 - c. Course Number and Name
 - d. Homework Number
3. There should be no more than 2 problems per page. This is to ensure that there is enough space on the paper for the grader to add comments.
4. Multiple sheets should be stapled at the top left corner of the page.

5. The submitted papers should be free of frail edges, stains, smudges and wrinkles.
6. All problems should include:
 - a. Problem Number
 - b. A diagram of the problem (draw all free body diagrams when necessary)
 - c. A set of given quantities
 - d. A set of unknown quantities
 - e. A set of assumptions
7. All numbers and writing should be clear and readable.
8. When required to produce a graph, use a computer program such as excel or matlab to generate the plot. Do not draw it by hand!
9. The **final answer should be boxed** and at the bottom of the problem.

Quizzes:

I may give announced or unannounced quizzes throughout the semester. These quizzes may cover assigned reading material or material covered in previous lectures.

Grades:

Homework/Quizzes/Workshop = 30%
 Professional Practice = 10%
 Design Project = 15%
 Midterm Exams (~~2*15%~~) = 20%
 Final Exam = 25%

Grade Scale:

A: 90-100
 B: 80-89
 C: 70-79
 D: 60-69
 F: <60

If necessary, I reserve the right to adjust the grade scale at the end of the semester to your benefit.

**NOTE:

There will be no makeup work or extra credit allowed/granted at the end of or during the semester unless allowed/granted to everyone by the instructor. All assignments must be turned in at the appropriate time to receive credit.

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. Your exam will be collected and your grade will be a zero if you are caught using a non-approved electronic device/calculators. 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, <https://ncees.org/exams/calculator/>. Below is an excerpt from the website:

Calculator policy

To protect the integrity of its exams, NCEES limits the types of calculators examinees may bring to exam sites. The list of approved calculators is reviewed annually.

The following calculator models are the only ones acceptable for use during the 2018 and 2019 exams:

- Casio: All fx-115 and fx-991 models (Any Casio calculator must have “fx-115” or “fx-991” in its model name.)
- Hewlett Packard: The HP 33s and HP 35s models, but no others
- Texas Instruments: All TI-30X and TI-36X models (Any Texas Instruments calculator must have “TI-30X” or “TI-36X” in its model name.)

Professional Practice:

Your professional practice grade will be computed based upon your attendance, the number of assignments you turn in, and performance in class

Final day to withdraw:

The final day to withdraw from the course without penalty is **March 30th**

Census dates:

The university requires that instructors to report the attendance to the register at various points in the semester. **The census date for this semester is January 27th**

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. Cheating on a major term exam will result in a failing grade in the course.

Collection of Student Work:

Throughout the semester I will collect student work (best, average, and worst) for the ABET 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. I will not draw 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.html>

Grade Replacement/Forgiveness: If you are repeating this course for a grade replacement, you must **file 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.

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.

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 an Accessibility Case Manager. 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