

CE 2343 Structural Analysis 15242

Fall 2021 Syllabus

*Note: the instructor reserves the right to modify the following information as deemed necessary.

Lecture Session: TR 9:00am – 10:20am

Lecture Location: Liberal Arts 108

Instructor: Joanne Moyer PhD

Email: jmmoyer@utep.edu

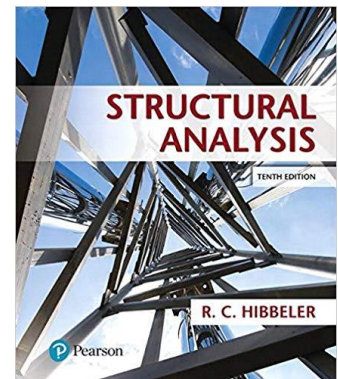
Online Office Hours: Monday and Thursday 1:00pm – 2:00pm
Or by appointment

Office Location: A-212

REQUIRED MATERIALS:

Textbook: Structural Analysis.
10th Edition by: R.C. Hibbeler, 2018
ISBN-10: 0-13-461067-9
ISBN-13: 978-0-13-461067-2

Assignments: Pearson: Mastering Engineering
Course Name: CE 2343 Structural Analysis Fall 2021
Course ID: moyer21566



<https://www.pearsonmylabandmastering.com/northamerica/masteringengineering/>

Calculator: Only NCEES approved calculators will be permitted, as these are what is allowed for the Fundamentals of Engineering exam. Visit the NCEES website (<http://ncees.org/exams/calculator/>) for more information. No phones. The following are a few of the suggested calculators:

- Hewlett Packard – HP 33S
- Casio – FX 115MS or FX 115MSPlus
- Texas Instruments – TI 30X IIS
- Texas Instruments – TI 36X SOLAR

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It is your responsibility to get acquainted with the features of the calculator you decide to use. I recommend that you use this calculator for all your work (including other courses) since this will help you learn how to use all the features of your calculator.

COURSE OBJECTIVES:

The objectives of CE 2343 are:

1. Identify structural form, components, applicable loads, and requisite analysis assumptions
2. Rapidly assess simple structures for stability and determinacy (review)
3. Apply mechanics principles to solve static equilibrium problems (review)
4. Solve for forces in statically determinate trusses (review)
5. Draw shear and moment diagrams for beams and frames (review)
6. Draw influence lines for reactions, forces, shears and moments
7. Determine internal forces in arches and cables
8. Estimate deflections in beams, frames, and trusses
9. Solve for simple statically indeterminate structures using classical methods
10. Develop an understanding of current structural engineering practice
11. Document structural calculations and understand the responsibility of an engineer
12. Use the internet as a resource to obtain information in support of structural analyses
13. Use and interpret results of structural analysis software

GRADING POLICY:

Your grade for this course will be determined on the basis of **1120 points** as follows:

Grading Scheme:	Exams:	300 points (100 points each exam)
	Final Exam:	300 points
	Quizzes:	160 points (40 points each quiz)
	Assignments:	160 points
	Group Term Project	200 points
		<hr/> Total 1120 points

Grading Structure:	A \geq 90
	90 > B \geq 80
	80 > C \geq 70
	70 > D \geq 60
	60 > F

WHAT SHOULD YOU EXPECT FROM ME AS THE INSTRUCTOR?

1. I will provide you with clear instructions on class expectations.
2. I will check my e-mail at least three times per week and will answer back to you as soon as possible.
3. I will leave myself open to suggestions about improvement of the class and class related activities.
4. I will do all I can to enhance your learning and success in this class.
5. If any changes in the course are to be implemented, I will ensure that the class is notified in a timely manner.

ATTENDANCE & CLASS PARTICIPATION:

- *Students are expected to attend all lectures and read all course material assigned.*
- Those who fail to attend classes regularly are inviting scholastic difficulty and, with the approval of the Dean of the College of Engineering, may be dropped from the course with a grade of F for repeated (4 or more) unexcused absences.
- Those who fail to complete the course material are inviting scholastic difficulty.

ASSIGNMENTS:

- *Assignment problems will be assigned via Pearson: Mastering Engineering.*
- *Written assignments may also be assigned during the semester.*
- *Assignments will be available after a subject has been covered. Assignments will be due within a week after availability.*
- Past experience clearly shows that a student's grade is strongly dependent upon the effort that is put into working and understanding the homework.
- **Late assignments will not be accepted. No exceptions!!**

QUIZZES:

Quizzes will be administered during the scheduled lecture time on-campus.

- **See tentative schedule for Quiz dates.**
- Quizzes are closed book – closed notes. Be sure to prepare and be ready to take quizzes.
- **The lowest quiz grade will be dropped from your grades.**
- **No makeup quizzes will be administered. No exceptions!!**

Five quizzes will be given. You must take the quizzes during the scheduled course time. These dates are announced on the first day of class although the dates may be changed according to the progress of the class.

EXAMS:

Exams will be administered during the scheduled lecture time on-campus.

- Exams are closed book – closed notes. No cell phones allowed.
- **No makeup exams will be administered. No exceptions!!**
- **See tentative schedule for Exam dates.**

Four mid-term exams will be given. You must take the exams during the scheduled exam times. These dates are announced on the first day of class although the dates may be changed according to the progress of the class.

In accordance with University regulations, students who miss examinations will receive grades of zero.

Make sure that you do not have a cell phone or any other electronic item in your possession during the exams.

The mere possession of a disallowed calculator, any cell phone or any other electronic item on or near you during exams is the ground for receiving a grade of zero.

FINAL EXAM:

The final exam will be administered during the scheduled lecture time on-campus

- Final Exam is closed book – closed notes. No cell phones allowed.
- **Students must take the final exam during the scheduled final exam time. No exceptions!!**
- Please see tentative schedule for Final Exam day and time.
- Final Exam is comprehensive.

COURSE PORTFOLIO:

Students are encouraged to prepare a course portfolio documenting all materials relevant to the course. The portfolio shall contain Power Point lecture notes, class notes, handouts, exams, homework assignments, study notes, and any relevant materials accumulated during the semester. I believe that you will benefit from the portfolio years later when you need to review the learned subjects for advanced courses or professional engineer licensure exam

TUTORING

ACES provides tutoring for Statics. Please take advantage of this great resource located in Classroom Building Room C-001. See the link below for hours of operation.

<https://www.utep.edu/engineering/student-resources/student-resources-aces.html>

PERSONS WITH DISABILITY:

UTEP seeks to provide reasonable accommodations for all qualified individuals with disabilities, including learning disabilities. This university will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required affording equal educational opportunity. It is the student's responsibility to register with Center for Accommodation and Support Services (CASS) in the East Union Bldg., Room 106 within the first two weeks of classes, and inform the faculty member to arrange for appropriate accommodations.

Center for Accommodation and Support Services (CASS) can also be reached in the following ways:

Web: <http://sa.utep.edu/cass/>

Monday thru Friday 8:00a.m.-5:00p.m.

Union Building East Room 106

Phone:(915) 747-5148

cass@utep.edu

POLICY ON CHEATING:

Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit 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. The Department of Civil Engineering has established the Honor Code because it has an obligation to the State and the public to prevent students from entering the profession who are not honest and trustworthy in their academic efforts. This Honor Code Policy allows the Department to recommend disciplinary action to the University Student Conduct Office and to remove students from the Department who have violated the Honor Code. This Honor Code is consistent with the *Student Conduct and Discipline* Chapter of the *Student Affairs* Section of the *Handbook of Operating Procedures* of the University of Texas at El Paso.

Course tutoring/homework help sites, such as Chegg, are strictly prohibited for use on exams and quizzes.

All students should sign the Honor Code Agreement and submitted to the Civil Engineering office for record keeping and be deeply familiar with the Honor Code Policy published in our website: <http://ce.utep.edu/honorcode.htm>

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TENTATIVE SCHEDULE:

NOTE: *Schedule may be modified to accommodate particular needs as the semester progresses.* It is to the students benefit that they read and study the chapters and sections as outlined in this calendar to reinforce the material that is presented in the class.

CE 2343 Structural Analysis Fall 2021 Tentative Schedule					
Week	DATES	CLASS TOPICS	Group Project	Quizzes	Exams
1	Aug 23 - Aug 29	Syllabus, Chapter 1 (Structural Loads)			
2	Aug 30 - Sept 5	Chapter 2 (Statically Determinate Structures)			
3	Sept 6 - Sept 12 *Sept 6 Labor Day-No classes*	Chapter 3 (Trusses)	Project group member names & topic due Friday Sept 10	Quiz 1 Thursday Sept 9	
4	Sept 13 - Sept 19	Chapter 4 (Internal Loadings, Shear and Moment Diagrams)			
5	Sept 20 - Sept 26	Chapter 4 (Internal Loadings, Shear and Moment Diagrams)			Exam 1 Thursday Sept 23
6	Sept 27 - Oct 3	Chapter 5 (Cables and Arches)			
7	Oct 4 - Oct 10	Chapter 6 (Influence Lines)		Quiz 2 Thursday Oct 7	
8	Oct 11 - Oct 17	Chapter 6	Project report rough draft due Friday Oct 15		Exam 2 Thursday Oct 14
9	Oct 18 - Oct 24	Chapter 7 (Deflections)		Quiz 3 Thursday Oct 21	
10	Oct 25 - Oct 31	Chapter 7			
11	Nov 1 - Nov 7	Chapter 8 (Deflection Using Energy Methods)			Exam 3 Thursday Nov 4
12	Nov 8 - Nov 14	Chapter 8		Quiz 4 Thursday Nov 11	
13	Nov 15 - Nov 21	Chapter 9 (Force Method)		Quiz 5 Thursday Nov 18	
14	Nov 22 - Nov 28 *Nov 25-26 Thanksgiving Holiday-No classes*	Chapter 10 (Slope Deflection Equations)			Exam 4 Tuesday Nov 23
15	Nov 29 - Dec 2	Group Presentations Tuesday Nov 30 and Thursday Dec 2	Group project report due Friday Dec 3		
Tuesday, Dec 7					
Final Exam: 10:00am - 12:45pm					

GROUP TERM PROJECT:

The group term project consists of submitting a research report and a group presentation.

Structural engineers design and work with various structural elements, materials, and technology. To become more familiar with these various components, each group will choose a structural element to research. The following are some suggestions:

Bridges	Trusses
Steel	Concrete Masonry Unit (CMU)
Concrete	Foundations
Skyscrapers	Tilt-Up Concrete
Cold-Formed Steel (Metal Studs)	Pre-Stressed and Post-Stressed Concrete
BIM	Concrete tilt-up Construction
Residential buildings	Welding
Role of technology	Shear Walls
AutoCAD/Revit	Wood construction
	Joist Design

You may also propose a structural topic.

Project Requirements:

- You may work alone, but must contact the instructor/TA by Sept 10 for approval along with your proposed topic. The project requirements for individuals are the same as for groups.
- Groups will consist of up to **four members** and email the instructor/TA of members names and proposed topic for approval before Sept 10.
- Each group will have a different topic.
- At the end of the semester, each team member will complete a peer evaluation on their fellow team members contribution towards the project. If a team member receives low remarks due to minimal contribution, their final project grade will be reduced in accordance with their evaluation.
- If a team member is not participating, inform the instructor/TA ASAP. The team member may be required to submit the final project individually.
- The reports will be subject to Safeassign plagiarism check. Reports that have higher than 25% plagiarism will not be considered and will result in a grade of zero.

Deliverables for the Project:

Report:

Report shall consist of a Title Page, Abstract, Introduction, Discussion, Conclusion, References. Concepts covered should include, but not limited to, the following:

- Role in engineering history
- Detailed explanation of topic
- Topics importance in engineering
- Types (if applicable to the topic; example: various bridge types)
- How concepts discussed in class are applied or considered regarding the topic
- Relevancy today
- What engineers must consider when analyzing the element
- How the element is used
- Influence in engineering
- Cite all references!!
- You can use pictures and/or images in your report. Be sure to cite them.

If you have questions on the topic or need guidance, contact Dr Moyer to discuss.

One group member shall submit the report in one file via blackboard for the entire group.

PowerPoint Presentation via zoom:

The PowerPoint Presentation (10-15 minutes) shall consist of each group member presenting on Nov 30 and Dec 2 to explain the topic.

- Please use appropriate font size to prepare slides.
- The text should be clearly visible
- Remember this is a final group presentation, so help each other to present as if you all are presenting in-person.

Deadlines:

Deadline to Obtain Term Project Topic Approval and Submit names of group members by Sept 10th. Email Instructor or TA for topic approval.

Report Rough Draft Submission Due Oct 15th 11:59pm. Upload rough draft on blackboard

Failure to meet the deadlines of term project approval or rough draft submission will result in 20-point deduction for each day late from the overall term project grade. No exceptions!!

Term Project Report Due: Dec 3th 11:59pm. Upload final report on blackboard.

Group Presentations Nov 30 and Dec 2 during class scheduled time.

Late submissions for the term project report and group presentations will not be accepted. No exceptions!!

Project Grading Rubric:

Team Members:

Report				
		Max Pts Allowed	Pts Earned	Comments
1	Penalties for late submissions			
2	Report looks professional - title page, intro, etc., spelling, grammar, overall organization	20		
3	Detailed explanation of topic	20		
4	Discussion of types, relevancy today, influence in engineering, how is used etc.	30		
5	Implement concepts from class	30		
6	References: cited	10		
Presentation				
7	Professionally presented/Each team member presented	20		
8	Detailed explanation of topic	30		
9	Discuss concepts from class	20		
10	Peer evaluations	20		
	Total Points	200		

FINAL COMMENT:

I wish you all the best in the course. Please do not hesitate to ask questions. **Any specific comments that students have on how the course might be improved are particularly welcome, especially during the semester.**