

CE 2343 Structural Analysis 15500

Fall 2020 Syllabus

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

Lecture Session: Online

Instructor: Joanne Moyer PhD (jimmoyer@utep.edu)
Office Location: A 212
Office Phone #: (915) 747-7456
Online Office Hours: Blackboard Collaborate
Wednesday 1:00pm – 2:00pm
Or by appointment

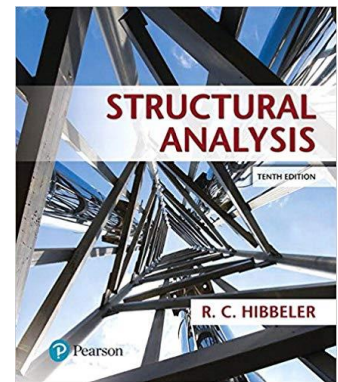
WHAT SHOULD YOU EXPECT FROM ME AS THE INSTRUCTOR?

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.

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 15500
Fall 2020
Course ID: moyer00998



<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:

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

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.

Technology: Webcam/Computer camera for online meetings and exams/quizzes.

CELL PHONES:

Please be courteous, and turn off your cell phones during the online lectures.

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:

Grading Scheme:	Exams:	10% each Exam, total 30%
	Final Exam:	20%
	Quizzes:	15%
	Assignments:	15%
	Group Term Project	20%

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

ATTENDANCE & CLASS PARTICIPATION:

- *Students are expected to attend all online lecture sessions, watch all videos, and read all course material assigned.*
- “Online Modules” will be provided for each Chapter and Sections, which include but not limited to: videos, lecture slides, readings, and assignments for the Chapters and Sections subject matter.
- 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:

Weekly quizzes will be administered via blackboard/Mastering Engineering. Respondus LockDown Browser (Webcam required) is required in order to take the quizzes through blackboard.

- **Weekly quiz day and time is Thursdays at 10am or 7pm MST. Each student will choose ONE quiz to complete.**
- Download Respondus LockDown Browser prior to the first online quiz. See Respondus LockDown Browser instructions for more information.
- Webcam/Computer Camera is required for the Respondus Lockdown Browser.
- I will send an email at least a day before the quiz on how the quiz will be administered. If either through blackboard or Mastering Engineering.
- Quizzes are closed book – closed notes. The lowest quiz grade will be dropped from your grades. Be sure to prepare and be ready to take quizzes.
- Each student must submit their work within the required timeframe that will be provided in order to receive credit. Failure to do so will result in a zero regardless if the answer is correct.
- **Late quizzes will not be accepted. No exceptions!!**
- **No makeup quizzes will be administered. No exceptions!!**

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EXAMS:

Exams will be administered via blackboard/Mastering Engineering. Respondus LockDown Browser (Webcam required) is required in order to take the exams on blackboard.

- Download Respondus LockDown Browser prior to the first online Exam. See Respondus LockDown Browser instructions for more information.
- Webcam/Computer Camera is required for the Respondus Lockdown Browser.
- Exams are closed book – closed notes. No cell phones allowed.
- Each student must submit their work within the required timeframe that will be provided in order to receive credit. Failure to do so will result in a zero regardless if the answer is correct.
- **No makeup exams will be administered. No exceptions!!**
- **See tentative schedule for Exam dates. The time for exams are at 10am or 7pm MST. Each student will choose ONE exam to complete.**

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

Your lowest exam score will be dropped.

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 via blackboard/Mastering Engineering. Respondus LockDown Browser (Webcam required) is required in order to take the quizzes on blackboard.

- Download Respondus LockDown Browser. See Respondus LockDown Browser instructions for more information.
- Webcam/Computer Camera is required for the Respondus Lockdown Browser.
- Final Exam is closed book – closed notes. No cell phones allowed.
- Each student must submit their work within the required timeframe that will be provided in order to receive credit. Failure to do so will result in a zero regardless if the answer is correct.
- **You must take the final exam during the scheduled final exam time. No exceptions!!**
- Please see tentative schedule for Final Exam day and time.

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The final exam is a **closed book-closed note** comprehensive exam. Every student is required to take the final exam at the end of the semester. Your lowest exam score will be replaced with your final exam grade, assuming that the final exam grade exceeds your prior scores.

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

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 Accomodation 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 Accomodation 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.

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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>

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.

Week	DATES	CLASS TOPICS
1	Aug 24-30	Chapter 1/Chapter 2
2	Aug 31 - Sept 6	Chapter 2
3	Sept 7 - Sept 13	Chapter 3 (Project group members & topic due Friday Sept 11)
4	Sept 14 - Sept 20	Chapter 4/ Exam 1 Thursday Sept 17
5	Sept 21-Sept 27	Chapter 4/Chapter 5
6	Sept 28 - Oct 4	Chapter 5/Chapter 6
7	Oct 5 - Oct 11	Chapter 6/ Exam 2 Thursday Oct 8
8	Oct 12 - Oct 18	Chapter 7 (Report rough draft due - Oct 16)
9	Oct 19 - Oct 25	Chapter 8
10	Oct 26 - Nov 1	Chapter 9
11	Nov 1 - Nov 8	Chapter 9/ Exam 3 Thursday Nov 5
12	Nov 9 - Nov 15	Chapter 10
13	Nov 16 - Nov 22	Chapter 10 (Presentation rough draft due Nov 20)
14	Nov 23 - Nov 29	Chapter 11
15	Nov 30 - Dec 4	Chapter 11/ Exam 4 Thursday Dec 3/Project Presentation & Report due Dec 4
Thursday, December 10		
Final Exam: 6:00pm - 8:45pm		

GROUP TERM PROJECTS (CHOOSE ONE OPTION):

Group Term Project #1 Option: Explain a Structural Failure

In all aspects of life, learning from a failure is critical to progressing. Structural Analysis is no different, though the consequences may be substantial. Throughout history, many structures have failed. Engineering practice has a responsibility to react. As up and coming engineers, you need to learn from history and ensure that mistakes are not repeated. The overarching purpose of this project is to expose you to structural failures, the circumstances that bring them about, the consequences, and the role of the engineer throughout.

Select a structural failure to research. Some suggestions include:

- Kansas City Skyway
- I-35W in Minneapolis
- I-5 Skagit River
- Florida International University Bridge
- Silver Bridge

You may propose a structural failure. The above are suggestions.

The report and PowerPoint presentation will discuss the circumstances that led to the failure that may not be strictly engineering related – like decisions which led to a situation where failure was likely. You should discuss the consequences of the failure, the influence on engineering practice, and the role of the engineer in this failure and in preventing future failures. Incorporate concepts that were learned and discussed in the course.

Group Term Project #2 Option: Explain a Structural Marvel

Structural marvels are able to capture the eye of cause non-engineers to be in awe. Structural Analysis is the reason for this captivation. Throughout history, many structures have made us wonder. As up and coming engineers, you need to learn from history and learn from the good as well as the bad experiences in engineering. The overarching purpose of this project is to expose you to structural marvels, the circumstances that bring them about, their influence on future structures, and the role of the engineer throughout.

Select a structural marvel to research. Some suggestions include:

- Pyramids of Giza
- Millau Viaduct
- National Stadium (Bird's Nest)
- Empire State Building
- Golden Gate Bridge

You may propose a marvel. The above are suggestions.

The report and PowerPoint presentation will discuss the circumstances that cause the structure to be an engineering marvel – for example decisions and difficulties that may have been encountered.

You should discuss the influence on engineering practice, and the role of the engineer in this marvel. Incorporate concepts that were learned and discussed in the course.

Deliverables for the Project:

Report:

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

- Description of the structure
- Role in engineering history
- Why it failed/why it's a marvel
- Concepts discussed in class and how applied in this particular case
- Recommendations to prevent further failures/recommendations to follow for future engineering marvel projects
- Cite all references!!

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

PowerPoint Voice-over Presentation:

The PowerPoint Presentation (15-20 minutes) shall consist of each group member presenting via voice-over.

- Combine the PowerPoint slides into one, and provide voice-over recordings for each slide from the team members just as you would present in-class.
- Each group member should clearly put his/her name and UTEP ID on the corresponding slides.
- Please use appropriate font size to prepare slides.
- The text should be clearly visible and voice of the presenter (start by introducing yourself) should be appropriately heard
- Remember this is a final group presentation so help each other to give an impression as if you all are presenting in-person.
- One group member shall submit the PowerPoint presentation (slides and voice-over) in one file via blackboard for the entire group.

Requirements:

- You may work alone, but must contact the instructor/TA by Sept 11 for approval. Individual projects must also receive topic approval by the instructor/TA by Sept 11. 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 by Sept 11.
- Each group must have a different topic.
- At the end of the semester, each team member will evaluate fellow team members contribution to the project through a peer evaluation. 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 20% plagiarism will not be considered and will result in a grade of zero.**

Deadlines and Penalties:

Project group members & topic approval due Friday Sept 11 by 11:59pm

Report rough draft due Friday Oct 16 by 11:59pm via blackboard

Presentation rough draft due Friday Nov 20 by 11:59pm via blackboard

Term project Presentation & Report due Friday Dec 4 by 11:59pm via blackboard

Failure to meet the deadlines of any of the above will result in 20-point deduction for each day late from the overall term project grade. No exceptions!!

Term Project Grading Criteria:

Team Members:

Report				
		Max Pts Allowed	Pts Earned	Comments
1	Reports looks professional - title page, abstract, intro, etc., overall organization	10		
2	Description of the scenario	20		
3	Discuss the role of engineer	30		
4	Discuss causes of failure/marvel	30		
5	Implement concepts from class	30		
6	Recommendations for future engineers	20		
7	Resources cited	10		
Presentation				
1	Professionally presented	20		
2	Summarize scenario	20		
3	Discuss role of engineer	30		
4	Causes of failure/marvel	30		
5	Implement concepts from class	30		
	Peer evaluations	20		
	Total Points	300		

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 welcomed, especially during the semester.**