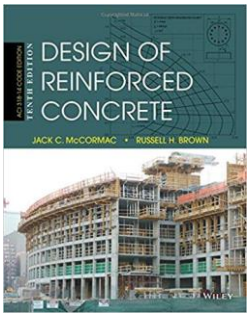
CE 3345 Reinforced Concrete Design
Lecture Sessions: MWF 9:30 am to 10:20 am
Classroom Building, CRBL C305
Fall 2019

Instructor: Reza Ashtiani, Ph.D. (reza@utep.edu)
Engineering Annex. Room 217
Office Hours: Students are always welcome

Teaching Assistant: Jorge Navarrete
TA Email: jlnavarrete@miners.utep.edu



Textbook: Design of Reinforced Concrete; Jack C. McCormac and Russell H. Brown, 10th Edition, Wiley, 2015.

Supplemental Documents: ACI 318-14 or 318-11, "Building Code Requirements for Reinforced Concrete" (Code and Commentary), American Concrete Institute, Detroit, MI.

ASCE Standard 7-10, "Minimum Design Loads for Buildings and Other Structures", American Society of Civil Engineers.

Reinforced Concrete: Mechanics and Design; James Wight, 7th Edition, Pearson, 2015.

COURSE OBJECTIVES

The objectives of CE 3345 are:

By the end of this course, you will understand the fundamental principles and behavior of reinforced concrete. You will be able to analyze and design the following reinforced concrete members / components based on the ACI 318 code:

- Beams (for flexural/bending and shear)
- One-way Slabs
- *Short* columns (using interaction diagram)
- *Slender/long* columns (in braced frames)
- Isolated and Continuous Footings

SCHEDULE

A tentative lecture schedule is on the class website. Reading assignments from your text and handouts will be assigned in class at the end of each lecture session. Prepared notes will occasionally be handed out in class to supplement, or in some cases to substitute for, reading material from the book. Be sure to save the notes because you will be examined over at least some of the material in them.

Chapter	Topic
1	Introduction
2	Flexural Analysis of Beams
3	Strength Analysis of Beams According to ACI Code
4	Design of Rectangular Beams and One-Way Slabs
5	Analysis and Design of T Beams and Doubly Reinforced Beams
6	Serviceability
7	Bond, Development Lengths, and Splices
8	Shear and Diagonal Tension
9	Introduction to Columns
10	Design of Short Columns
11	Slender Columns

GRADING

Your grade for this course will be determined on the basis of ***1050 points*** as follows:

1. Two mid-term exams (150 points each)
2. Final comprehensive examination (400 points)
3. Homework Assignments (300 points)
4. Critical Assessment (attendance and active participation in discussions) (50 points)

In accordance with University regulations, students who miss examinations will receive grades of zero. Exceptions to this rule will be made only on a carefully considered individual basis and only if the student contacts the instructor ***before*** the exam. If you know in advance that you are going to miss an exam, it is ***your*** responsibility to inform the professor before the exam.

GRADE STRUCTURE

Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

Letter Grade	Percentage	Performance
A	90-100	Excellent Work
B	80-89	Very Good Work
C	70-79	Average Work
D	60-69	Below Average Work
F	0-59	Failing Work

HOMEWORK

All homework problems will be assigned in the class. The due date for homework submission is one week after the assigned date before 5:30 pm. Past experience clearly shows that a student's grade is strongly dependent upon the effort that is put into working and understanding the homework. Homework solutions will be available on due dates. Make sure to discuss the homework solutions with your teaching assistant, to properly understand the materials. We encourage that you team up with your other classmates for this activity. Please note that each student is responsible to submit the homework assignment individually.

EXAMINATIONS

Exam #1 and exam #2 will last between 60 minutes to 90 minutes. The final comprehensive exam covers all the materials discussed in the class (topics 1-9). The list of the topics is presented on page 2 of this document. Final examination, which is comprehensive and covers all the course materials, will last two hours. ***You need to score above 50% in the final examination to pass the course.***

COURSE PORTFOLIO

Students are required 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. You may consider to keep a digital copy of the portfolio. 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.

STUDY GROUPS

Students should form study groups of about two to three persons. Group members are encouraged to get together to solve the homework problems. Keep in mind that every student should submit the homework problems individually.

ATTENDANCE

Students are expected to attend all lecture sessions. 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. ***Homework assignments and other material will be distributed electronically.***

CALCULATORS AND CELL PHONES

To prepare you for the Fundamental of Engineering (FE) and Professional Engineering (PE) exams (http://www.ncees.org/exams/calculators/), only the following calculators are allowed during class, labs and exams:

- 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.

It is a very good manner to turn off your cell phones during the class lectures and lab sessions. However, please make sure that you do not have a cell phone or any other electronic item with you during the exams.

The mere possession of a disallowed calculator, any cell phone or any other electronic item on or near you during tests is the ground for dismissing you from the exam with a grade of zero.

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 (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university. Policies on scholastic dishonesty will be strictly enforced.

ACCOMODATIONS FOR STUDENTS WITH DISABILITY

If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at https://www.utep.edu/student-affairs/cass/.

COURSE/INSTRUCTOR EVALUATION

An online course/instructor evaluation will be conducted near the end of the semester.

CE3345-REINFORCED CONCRETE DESIGN TOPICS

FALL 2019