

CE 4361/ 5312: Advanced Concrete Design I
Course Syllabus
Fall 2014

When: Tuesday and Thursday **Time:** 2:00 pm – 3:20 pm **Location:** Room NH 106

Instructor: Mohammad Razavi
Office: 433 Nedderman Hall
Phone: 817-272-5216
Email: Razavi@uta.edu
Office Hours: Tu-Th 3:30 pm – 6:00 pm
or by appointment

Graduate Teaching Assistant:
TBA

TBA

Prerequisites: CE 4347 Reinforced Concrete Design with a grade of C or better.

Required Textbook: *Structural Concrete: Theory and Design, Reinforced Concrete: Mechanics and Design, 6th Ed, James K. Wight, James G. MacGregor, 2011, Pearson Prentice-Hall, ISBN9780132176521, ISBN 10 0132176521*

Course Content: Includes structural design of slender columns, walls, truss model for shear and torsion; structural systems such as continuous beams, two-way slabs, yield-line theory and shear friction. Behavior of reinforced concrete structures, with emphasis on ductility and detailing of frames, slabs, and detailing for seismic loads will be covered. Building codes, American Concrete Institute (ACI) specifications, material specifications, test methods, and recommended practice documents. Credit not granted for both CE 4361 and CE 5312

Student Learning Outcomes

(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability (tested Explicitly)

Techniques, Skills, and Modern Engineering Tools Used in this Course:

Students are encouraged to use the engineering software tool Mathcad on homework.

Homework: A number of relevant homework problems, grouped into one or more problem sets will be assigned on the class website or given in class at the end of lecture.

Assignments will be collected in class at the beginning of a lecture in hard copy. Late Homework will NOT be accepted unless arrangement has been made in advance with the instructor. Homework are suggested to be in a standard format. This includes: (a) statement of the problem (with a sketch); (b) quantities with given values; (c) quantities to be found; and (d) solution of the problem. Draw a box around the answer(s). DO NOT WRITE IN THE BACK OF THE PAGE

Make-up Examinations: Makeup examinations are not given. If an examination is missed as a result of an illness or because of a University Authorized Absence, the weight of the missed examination will be added to the weight of the final examination when the class grade is determined. It is the responsibility of the student to provide acceptable, written documentation for absences that occur on the day of an examination. http://web.uta.edu/catalog/content/general/academic_regulations.aspx#5 in the UTA catalog at discusses University Authorized Absence. If arrangements are made well in advance, an examination can usually be taken before the scheduled time and a more lenient excuse policy is applied.

Grading policy:

<u>Weighting of grades</u>			<u>Final grades</u>
Homework	10%		
Project	10%		A 90 - 100 %
Midterm I	25%	(October 9, 2014)	B 80 - 89.99 %
Midterm II	25%	(November 13, 2014)	C 70 - 79.99 %
Final exam	30%	(University Schedule)	D 60 - 69.99 %
Total weight	100 %		< 59.99 % F

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have decided that attendance at class meetings is not required but strongly encouraged.

Policies: In general, the class will be conducted in accordance with the policies given below. However, it is impossible to anticipate every possible circumstance. The instructor reserves the right to modify the given policies or to deviate from them in unforeseen or unusual circumstances. If there is a policy that you anticipate will affect you in a way that seems unfair, please bring it to the attention of the instructor before the end of the second week of class. After that, the reason for a student initiated change in policy must be compelling.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Course Schedule:

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Mohammad Razavi

<i>Topics covered</i>	<i>Timetable</i>
<ul style="list-style-type: none"> • Short Column Review • Length effects on column: buckling of concentric columns, moment magnification, braced vs. unbraced frames • Two Way Slabs: Behavior, Analysis, and Design • Torsional design, torsional stress and stiffness, strength of concrete sections in torsion, strength in combined shear and torsion 	August 21 – October 9
<ul style="list-style-type: none"> • Deep flexural members, stress distribution, brackets and corbels, horizontal and vertical steel placement • Cantilever retaining walls, forces and stability of retaining walls, proportioning of walls • Shear walls in multi-story buildings, cantilever walls, interaction of shear walls-rigid frames 	October 9 – November 13
<ul style="list-style-type: none"> • Design for Earthquake Resistance • Detailings 	November 13 – Dec 3