Department of Civil Engineering
The University of Texas Arlington

CE 4347 – REINFORCED CONCRETE DESIGN
Fall 2010

Prerequisite: CE 3341 Structural Analysis

Instructor: Dr. Shih-Ho Chao

Office: NH, RM 407
Phone: 817-272-2550
shchao@uta.edu

Lectures: From August 26 to December 9: Tuesdays and Thursdays, 9:30 AM-10:50 AM
NH 203

Office Hrs:

- Tuesdays and Thursdays, 11:00 AM-12:00 PM; 1:30PM-2:30PM
- Questions via e-mail
- Or by appointment

GTA:

Netra Karki. Office hours: Tuesdays and Thursdays 12:30 PM-1:50 PM.

RM 137 CELB
Cell Phone: 469-441-5962

Course Outline:

1. Introduction
2. Material Properties
3. Behavior and Flexural Strength of R/C Sections
4. Flexural Design of R/C Beams and One-Way Slabs
5. Shear Design of R/C Beams
6. Development Lengths, Bar Cutoffs and Continuity Details
7. Serviceability
8. Analysis and Design of Short Columns Subject to Axial Load and Bending
9. Analysis and Design of Slender Columns Subject to Axial Load and Bending (if time allows)

Computer Programs:

- *StructurePoint package* (http://www.structurepoint.org/): *spBeam, spColumn spSlab, spWall, spMats)* is available in RM 226 (**username: ce4347; password: rebar2, door: 003-0934**). The user's manual can be found under one of the folders.

- *RISA-3D* (http://www.risatech.com/p_risa3d.html) is also available in RM 226. The user's manual can be found under one of the folders.

- Please contact Lewis Crow (lcrow@uta.edu) if you have any problem in running this program.

Textbook:

Design of Concrete Structures, Fourteenth edition by A. H. Nilson, D. Darwin, and C. W. Dolan, McGraw-Hill, 2010. (**Required**)

Code:

ACI Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary. Available through Dr. Chao (**Required**)

Homework:

- Homework problems will be assigned each Tuesday (or Thursday) and are generally due the following Tuesday (or Thursday).
- Homework will be collected at the beginning of class on the due date. A late homework loses 30% per day.
- Students are encouraged to see the GTA and instructor about those assigned problems the student is having trouble with.
- Students are also encouraged to work in small groups to develop solutions to the problems but each student must write up his/her own homework. No credit will be given for homework copied or if your homework has been copied.

Term Project:

Topic of the term project and names in each group will be announced after the first mid-term exam. Final presentation of the term project is on Thursday December 9 during lecture and the report is due on the same day. The written report is to be less than 12 pages.

Examinations:

There will be two mid-term exams (in class) and a final examination (comprehensive). The exams are open book/notes but no computer program is allowed. All answers for the exam problems must be justified. Seats will be assigned for all exams.

Scheduled exam dates are:

First mid-term: October 7 (Thursday), 9:30 AM-10:50 PM; NH 203
Second mid-term: November 11 (Thursday), 9:30 AM-10:50 PM; NH 203
Final exam: December 16 (Thursday), 8:00 AM-10:30 AM; NH 203

Make-up Exam Policy:

Makeup exams are given only in extreme circumstances; examples of extreme circumstances are serious illness of the student (doctor's note required) or death in the family. I must be contacted before the exam if such a circumstance applies to you.

Make-up Classes:

Will be announced later.

Grading: The course grade will be based on:

20% - Homework
40% - Two mid-term exams
10% - Term project
30% - Final exam

100%

Final exam will not be returned, but may be reviewed by students.

The grade assigned to the student's numerical average will be as follows:

(a)	90 to 100 average	=	A
(b)	80 to 89.9 average	=	B
(c)	70 to 79.9 average	=	C
(d)	60 to 69.9 average	=	D
(e)	< 60 average	=	F

Course Objective:

To develop an understanding of performance and design methodology for Basic Reinforced Concrete Structural Elements. In addition this course will focus on the following:

(a) Apply knowledge of mathematics, science and engineering
(b) Designing a component to meet desired needs
(c) Identify, formulate, and solve engineering problems
(d) Understanding professional & ethical responsibilities
(e) Understand the impact of an engineering solution in a global and societal context
(f) Recognize the need for engineering in life-long learning
(g) Knowledge of contemporary civil engineering issues
(h) Using technique, skills and modern engineering tools

Americans with Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity:

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of 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, Series 50101, Section 2.2).

Student Support Services Available:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

Librarian to Contact:

Antoinette Nelson (817-272-7433 or nelsona@uta.edu), Science & Engineering Librarian.

E-Culture Policy:

The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email. All students are assigned an email account and information about activating and using it is available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

Note: I will be using email very often to send class handouts, homework assignments, and announcement; reply questions from students, etc. Please send me your preferred email address if you do not check UTA email.

Final Review Week:

A period of five class days prior to the first day of final examinations will be designated as FINAL REVIEW WEEK. The purpose of this week is to allow UT Arlington students sufficient time to prepare for final exams. During this week, there will be no schedule or required activities such as field trips, seminars, 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 will not give any exams constituting 10% or more of the final grade, except make-up tests and laboratory examinations. In addition, no instructor will give any portion of the final exam during Final Review Week.