CIVE 467 – Design of Reinforced Concrete Structures
Spring 2012
MWF 1:00-1:50pm  Clark C146

Instructor:
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Office Hours: MWF 2-3 pm

I will do my best to always be available at these times. Also, I am generally on the main campus all day MWF and if my door is open feel free to stop by. If you have trouble reaching me please schedule an appointment.

Course Website: RamCT

Course Objectives: To become familiar with reinforced concrete as a structural material and to learn techniques for the design of basic reinforced concrete members using *ACI 318 – Building Code Requirements for Structural Concrete*.

Topics:
- Introduction to Reinforced Concrete and the Design Process (including Design Philosophies)
- Determination of Loads for Structural Design
- Analysis and Design of Beams Loaded in Flexure and Shear (including One-Way Slabs)
- Analysis and Design of Columns and Beam-Columns
- Detailing Requirements (Development and Splice Lengths, Minimum and Maximum Spacing, Cover)
- Analysis and Design of Footings and Walls
- Introduction to Advanced Topics (e.g. Torsion, Two-Way Slabs, Strut and Tie Modeling, Prestressed Concrete) as time allows

Required Text:
*ACI 318-11 Building Code Requirements for Structural Concrete and Commentary.* American Concrete Institute, Farmington Hills, MI: 2011.

You should bring this book to class with you EVERY DAY. A big part of the course is becoming familiar with the manual and learning how to interpret its provisions. In order to get the student discounted price of ____, I need to place a group order. I will pass around a sign-up sheet and collect checks made payable to ASCE.

Suggested Text:

Although not required, I strongly recommend that you consider purchasing a traditional textbook to help you learn the course material. I have recommended the text above and it is available at the bookstore. There are a lot of different books out there, and if you are on a tight budget you might consider an older edition, a different author, or the library. Just be warned that older editions won’t necessarily match the new code provisions. Most of the theory is probably fine – but specific equations and numbers might not match exactly.
Prerequisites: CIVE 367

Assignments and Grading:
Homework (22%)
Homework problems will be assigned as needed, roughly once a week. These assignments should be completed individually, although I encourage you to consult with other students and me when necessary. Make sure you give every problem a reasonable amount of effort before seeking help. Remember that working through the problems is one of the best ways to learn the material and prepare for tests, and that homework is assigned to help you learn – not because grading is fun.

Assignments will be due by 4:00pm on the assigned due date. **Late assignments will not be accepted.**

Organization, neatness, and completeness (in terms of solution process) will count for 10% of the grade on each homework assignment. Engineers must be able to communicate their work to each other. Hand calculations are part of the design documentation process. This part of the grade will be assigned at the grader's discretion; but I will instruct them to grade this component harshly.

Class Participation/Behavior (3%)
I expect all students to bring their copy of ACI 318 to class everyday and to stay on task working on example problems during those class periods when I allow time for working. One percentage point will be subtracted for each time students forget their manual or significantly stray from topic during class. I also expect students to be respectful when I am teaching. One percentage point will be subtracted for each occurrence of disrespectful behavior such as (but not limited to) students holding private conversations while I am talking or disruptive entrances and exits from the classroom. Students who continue to display disruptive behavior after they have lost all 3% will be referred to the Office of Conflict Resolution and Student Conduct Services.

Exams (75%)
There will be three midterms (15% each) in this class and a final (30%). All tests will be cumulative with an emphasis on more recent material. **Students must use a FE approved calculator on exams.** Students will be allowed to use their building code and a single page (front and back) formula sheet during tests. Students can write in manuals as they see fit, and they can use SMALL tabs to mark significant pages, but larger tabs/post-its with notes are NOT ALLOWED.

I am often asked about the best way to prepare for tests. I firmly believe that the best way to prepare is to learn the material as we go and just spend a few hours reviewing your old homeworks, notes and the manual before the test.

Midterms will be announced in class at least one week prior to the test date. I am tentatively planning to have them in class on Wednesday February 22nd, Wednesday March 28th and Wednesday April 25th. The final exam will be given on Thursday, May 10th from 4:10-6:10pm as scheduled by the university. Make-up exams will be given only in extraordinary, documented circumstances.

Final Grades
Term grades for this course will be assigned using +/- grading. Remember these grades are a reflection of your work throughout the semester. You need to start worrying about your final grade NOW. By the time we get to May it is too late to make big changes.
Academic Integrity:
This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog (online at http://catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf) and the Student Conduct Code (online at http://www.conflictresolution.colostate.edu/conduct-code.aspx).

As stated by the Catalog “Academic integrity is conceptualized as doing and taking credit for one’s own work.” In this class all assignments should be completed by individuals. Below I have described in general terms how academic integrity applies to each graded component. This description is not all inclusive, please contact me if you have questions about behaviors not specifically described here.

Exams will include the following honor pledge for you to sign:

I pledge on my honor that I have not received or given any unauthorized assistance in this exam.

Homework Assignments – Students are encouraged to consult with and learn from each other, but the final submitted assignment must reflect the individual effort and understanding of the student submitting the assignment. Direct copying is not acceptable and in this case all students with the same work will be given a zero.

Exams – The midterm and final exams should be completed individually without aid from other students. Students are allowed to use only their own copy of ACI 318 and a one page formula sheet. Exams must be taken with FE approved calculators.

Class Participation/Behavior – When I ask for group work during class sessions it is important that each student participates in the assignment, so as not to compromise the learning opportunity of other students.

Special Needs:
If you have any special needs please come visit me during office hours so that we can discuss how I can help you be successful in this course.