Southern Polytechnic State University
CE4202 Steel and Concrete Design
Course Syllabus – Fall 2011

Instructor:

Wasim Barham, Ph.D.
Assistant Professor
Office: M160A
Tel: 678 915 3946
Email Address: wbarham@spsu.edu
Office Hours: Tuesday:11:30am – 12:30pm
                             Wednesday: 11:00am – 12:30pm
                                       5:00 pm – 6:00pm
                             Thursday: 8:30am-10:00am
                             Other times (By appointment – Walk in- Email me or Call me!!!)

Class Time and Location:

Lecture: Monday and Wednesday: 6:00pm –7:15 pm
                    Room: M137

Textbook (Required):

McCormac, J. C. *Design of Reinforced Concrete, 8*th edition, John Wiley & Sons, 2009
ISBN-10: 0321014626; ISBN-13: 978-0321014627

Segui, W. T. *Steel Design*, 4th Edition, Thomson Learning, 2006. ISBN: 9780495244714

Codes:

ACI Committee 318, *Building Code Requirements for Structural Concrete (ACI318-08) and Commentary (ACI318R-08)*, American Concrete Institute, Farmington Hills, MI, 2008.

AISC Steel Construction Manual, 13th Edition

Learning Outcomes:

1) Design singly reinforced concrete beams
2) Design one-way reinforced concrete slabs
3) Design for shear strength of beams
4) Calculate deflections in concrete beams using cracking moment and effective moment of inertias
5) Design axially loaded short reinforced concrete columns
6) Design of steel tension members
7) Design concentrically loaded steel columns
8) Design both laterally braced and unbraced steel beams

Course Outcome Measures and Assessment:

Measures and assessment of the outcomes will be made by:

1. Periodic homework assignments and quizzes.
2. Three one hour exams during the semester.
3. One 2-hour final exam.
4. Course and instructor evaluation to provide student feedback on the perceived quality of the course and effectiveness of the instructor.

Grading:

1. First exam (end of September)	15%
2. Second exam (mid November)	15%
3. Third exam (mid November)	15%
4. Homework	15%
5. Project	10 %
6. Final exam (during finals week)	30%

> **The Grading Scale is as follows:**
>
> 90.0 % and up = A
>
> 77.0-89.0% = B
>
> 64.0-76.0% = C
>
> 52.0-63.0% = D
>
> 0.0 - 51.0% = F

- Late homework will NOT be accepted for credit. Work turned in late may be evaluated to provide you with feedback, but will not be graded / given credit except in cases of documented emergency.

Homework Preparation Guideline:

- Homework must be submitted on engineering calculation sheets
- Homework must be bounded or stapled
- Show all your work for full credit! Write your name on every page. Present your work neatly!

Disruptive Behavior and Academic Dishonesty

A faculty member reserves the right to remove any student from his or her course if the student's behavior is of a disruptive nature or where there is evidence of academic dishonesty. In instances of disruptive behavior and/or academic dishonesty, the faculty member will discuss the circumstances with the student(s) before taking final action. In the event the student cannot be reached, he/she will be given the grade of "Incomplete" until such time as he/she can be reached. The student shall have the right of appeal of the faculty member's decision first to the faculty member's department head and then to the appropriate college or school dean and, if necessary, to the Vice President for Academic Affairs. Removal of a student from a course under this provision will result in the faculty member's issuing a grade of "F". A grade of "F" issued under these circumstances shall not be superseded by a voluntary withdrawal and will be included in the student's cumulative grade point average calculated for graduation purposes. *(SPSU Student's Handbook)*

Lecture Topics:

Part one: Reinforced Concrete Design (week 1 through week 9)

1. Materials and Mechanics of Bending

2. Rectangular Reinforced Concrete Beams and Slabs: Tension Steel Only

3. Shear in Beams

4. Development, Splices, and Simple-Span Bar Cutoffs

5. Serviceability

6. Columns

7. Detailing Reinforced Concrete Structures

Part two: Steel Design (week 10 through week 16)

1. Structural Steel and Properties

2. Tension Members

3. Compression Members, Columns

4. Beam Design

5. Connections