



**CE 4202**  
**Steel and Concrete Design**  
*Fall 2012*

- TIME & PLACE:** MW, 4:00 – 5:50 PM, J220
- CREDITS:** 4 Credits
- INSTRUCTOR:** Metin Oguzmert, PhD, PE  
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- OFFICE HOURS:** T R, 1:30-3:00 PM                      W, 10:00AM-12:00PM
- PREREQS:** CE3201 – Structural Analysis
- TEXTBOOKS:** *Reinforced Concrete: Mechanics and Design*, 6th Edition, James K. Wight, James G. MacGregor, Prentice Hall, ISBN 978-013217652 (Recommended)
- Steel Design, 5th Edition, William T. Segui, Cengage Learning, 2012. ISBN: 978-1111576004*
- CODES:** *ACI318-11: Building Code Requirements for Structural Concrete and Commentary*, 2011, ISBN 978-0870317446
- AISC Steel Construction Manual, 14th 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

**GRADING:**

- MIDTERMS (2) - 40%
- FINAL - 30% (Comprehensive)
- HOMEWORK - 20% (~6 Assignments)
- Project - 10%

Grading Policy\*:

A	B	C	D	F
100 - 90	89.9 - 80	79.9 - 70	69.9 - 60	59.9 - 0

\*The instructor reserves the right to adjust these cutoffs downward.

**POLICIES:**

- Every homework assignment is due in one week, unless instructed otherwise
- Assignments have to be turned in during class session.
- If you are turning in multiple sheets, then use a stapler. Do not use paper clips and do not fold papers.
- Late submissions of assignments are not encouraged; however, if you cannot finish in time a penalty of 50% will be assessed on late assignments submitted within next class meeting time of the due date. After the grace period, ZERO credit towards a final grade.
- Submission will not be accepted if the solutions are distributed by any means.
- You may consult with others on assignments, provided you only submit your attempt at the work.
- Use of cell phones in classroom is not allowed for any purpose. Please put your phone on silent and keep it off your desk during the class.

**ACADEMIC HONESTY & DISRUPTIVE BEHAVIOR:**

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).

**SPSU HONOR CODE:**

As a member of the Southern Polytechnic State University community of scholars, I understand that my actions are not only a reflection on myself, but also a reflection on the University and the larger body of scholars of which it is a part. Acting unethically, no matter how minor the offense, will be detrimental to my academic progress and self-image. It will also adversely affect all students, faculty, staff, the reputation of this University, and the value of the degrees it awards. Whether on campus or online, I understand that it is not only my personal responsibility, but also a duty to the entire SPSU community that I act in a manner consistent with the highest level of academic integrity. Therefore, I promise that as a member of the Southern Polytechnic State University community, I will not participate in any form of academic misconduct. I also understand that it is my responsibility to hold others to these same standards by addressing actions that deviate from the University-wide commitment to working, living, and learning in an environment conducive to a quality education. Thus, I affirm and adopt this honor code of Southern Polytechnic State University.

**OUTLINE:**

*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