

**Southern Polytechnic State University**  
**Course Syllabus**  
**CM 3210**  
**Applied Structures – I**  
**(4-0-4)**  
**Fall 2009**

**Prerequisite: CET 2200**

**Classroom: H322**

**Class Periods: M, W @ 6:00pm – 7:50pm**

**Required Text:** Simplified Engineering for Architects and Builders, Tenth Edition, James Ambrose and Patrick Tripeny, John Wiley & Sons, Inc.

**Grading Policy**

Homework	40 %
Exam I	15 %
Exam 2	15 %
Exam 3	20%
Class Participation & pop quizzes	10%

**Total: 100 %**

The minimum cutoff for an A is 90%; for a B is 80%; for a C is 70%; and for a D is 60%. Anything below 60% is considered an F. There will be no curve on this course only straight average.\*\* The minimum cutoff for an A is 90%; for a B is 80%; for a C is 70%; and for a D is 60%. Anything below 60% is considered an F.

\*\*The only grade adjustment possible will be the following: If a student is on the border of a grade (59, 69, 79, 89), the class attendance record will be used to award a 1% increase to the final grade. To earn this 1% increase, students must be present at least 75% of the meeting during the semester.

**Instructor:** Dr. Pavan Meadati  
Office: H-338  
Office Hours: Monday 11:00am to 12:00noon  
Wednesday 11:00am to 12:00noon  
(Other times available by appointment)  
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### CM 3210 Course Outline

Class	Date	Topics	Assignments/Due	Chapter(s) in Text
1	Aug 24	Introduction	NONE	1
2	Aug 26	Forces, Reactions, Sectional properties	HW-1 Assigned	1,2
3	Aug 31	Shear and Bending Moments, Types of Beams, Joint conditions	NONE	3
4	Sep 3	Shear and Bending Moments, Types of Beams, Joint conditions	HW-1 Due	3
5	Sep 7	<b>Labor Day Holiday (No Class)</b>		
6	Sep 9	Shear and Bending Moments, Types of Beams, Joint conditions	HW-2 Assigned	3
7	Sep 14	Structural Design Loads and Methods	NONE	4
8	Sep 16	Why steel Structures, steel structural products	HW-2 Due	
9	Sep 21	Steel Beams and Framing Elements	HW-3 Assigned	8
10	Sep 23	Steel Beams, Flexure and Shear design, Deflection Control	NONE	9
11	Sep 28	Steel Beams, Flexure and Shear design, Deflection Control	HW-3 Due	9
12	Sep 30	<b>Exam 1 (Attendance Required)</b>	NONE	9
13	Oct 5	Steel Beams and Framing Elements	NONE	9
14	Oct 7	Steel Beams and Framing Elements	NONE	9
14	Oct 12	Columns Shapes, Slenderness and End conditions	HW-4 Assigned	10
16	Oct 14	Steel Columns Design	NONE	10
17	Oct 19	RCC Structures – Elements	HW-4 Due	13
18	Oct 21	Beams, Flexure and Shear design, Deflection Control	HW-5 Assigned	13
19	Oct 26	Beam Shear design	NONE	13

20	Oct 28	Double reinforced Beam	HW-5 Due	13
21	Nov 2	Double reinforced Beam	NONE	13
22	Nov 4	<b>Exam 2 (Attendance Required)</b>		
23	Nov 9	Slab Design	HW-6 Assigned	14
24	Nov 11	Slab Design	NONE	14
25	Nov 16	Concrete Column Design	HW-6 Due	15
26	Nov 18	RCC Foundations	HW-7 Assigned	15
27	Nov 23	RCC Foundations	NONE	16
28	Nov 25	<b>Thanks Giving Holiday (No Class)</b>		
29	Nov 30	Retaining Walls	HW-7 Due	
30	Dec 2	Retaining Walls	NONE	
31	Dec 7	Presentations - 4 minutes each (Power Point)	NONE	
32	Dec 9	Presentations - 4 minutes each (Power Point)	NONE	
33	Dec 14	<b>Exam 3 (Attendance Required)</b>	NONE	

**Note:** The outline is intended to represent the general format of class. The instructor may make changes to better suit the needs of the class.

## **Catalog Description**

A descriptive study of structural behavior with an overview of statics, strength of materials, design of beams and columns for concrete, steel, and timber structural systems.

## **Course Learning Objectives**

This course provides an overview of structural systems from the perspective of construction managers. The course provides fundamental structural mechanics and summarizes basic issues relevant to common forms of construction and major structural materials such as steel and concrete. Various issues, while selecting a framing system or materials, which must be considered by the construction managers, will be discussed. These include safety including loads for different type of building use, serviceability requirements, environmental concerns such as wind and earthquakes, contractors concerns such as support and equipment required during construction. The course will end with an introduction to the philosophy of design issues and related economics issues. Students will be required to complete a series of individual assignments that focus on specific concepts covered in the course.

## **Learning Outcomes**

The students will have the ability to

- 1) Model real world structures in two dimensions for analysis.
- 2) Analyze and design simple steel beams and columns for flexure, shear and deflection.
- 3) Analyze and design simple reinforced concrete beams and columns for flexure, shear and deflection.
- 4) Analyze and design reinforced concrete slab and footing for flexure, shear and deflection.

## **Specific Requirements for the Course:**

### **Homework**

There are seven (7) homeworks to be completed individually. Homework should have a professional appearance, being neat, logically formatted, and legible. Assignments will be turned in at the beginning of class on the date due. It is each student's responsibility to deliver late assignments to the department mailbox of the instructor. Homework that is submitted after the beginning of class will receive a penalty of 10%. Homework submitted the day after the class on which that is due will receive a penalty of 25%, 2 days after 50%, 3 days after 100% off.

The instructor reserves the right to make any modifications or changes to the number and type of assignments, depending on the class progress, or on any special circumstance that may arise during the quarter.

### **Classnotes and pop quizzes**

Open book pop quizzes will be conducted. The duration of the quiz varies from 10-20 minutes. Questions in the quiz covers the material discussed in the previous class lectures. Hence every meeting class notes has to be maintained. This practice helps to find the answers to the quiz questions.

### **Exams**

There are three exams in the course. The exams will test the individual student's understanding of some of the principal concepts covered in the course. The exams cover material discussed in the lectures, or included in the assigned readings up to the time of the exam. If an exam is missed as a result of an excused absence, it needs to be made up. If an exam is missed as a result of an unexcused absence or being late to class, it will not receive any credit at all (i.e., 0 points).

### **Attendance**

Students are expected to be present for every meeting of the course. It is expected that students will arrive to class on time and if expected to be absent from class, prior notification to the instructor is required (e-mails are accepted for this purpose). Students are advised, that their attendance record (e.g., excessive number of absences) is one of the criteria that will be used to decide borderline final grade cases (i.e., between A/B, B/C, C/D and D/F). Thus, a class sign-up sheet will be passed each lecture, and will

become the record of the student's attendance during the semester. All absences will be considered unexcused absences, unless they are cleared with the instructor with a memorandum, submitted electronically (i.e., via Email), stating the date and reason for the absence.

### **Other Requirements**

- It is expected that students will complete the readings before the class date so that any questions that arise may be discussed fully.
- Each student is expected to behave in a professional way.
- Plagiarism or any form of cheating violates the academic principles and will not be tolerated.
- Make-up quizzes **WILL NOT BE GIVEN** under any circumstance.
- Any request for grade revision must be made in writing (typed and formally written like a business letter) and delivered to the course instructor or to department personnel in person (**no email, no fax**) before the two (2) day deadline. After the two (2) day deadline, students waive their rights for appeals. The request for grade revision must include the name of the student, the assignment or test in question, description of the item in question, and the reasons for requesting the revision. Students must present their argument clearly and substantiate with evidence. The course instructor will evaluate the request and take appropriate action.
- The course instructor reserves the right to make exceptions as he deems appropriate. (if I make an exception with one student this does not mean that I will do the same for others)
- If you are given the opportunity to make up quiz, it must be no later than the class period after the one in which the quiz took place (no extensions).
- Students unable to participate in a class shall be responsible to submit homework in time, as per schedule. Such student shall make up for the missed class, on their own, without affecting progress of rest of the students

### **Cell Phone and Personal Device Policy**

The use of cell phones/PDAs/pagers during class will not be tolerated. Turn them OFF before entering class and they are to remain off until the class is completed. The classroom environment will be treated the same way as if this was a corporate meeting in a large conference room in which your boss was delivering a presentation. He/she would not tolerate their use and a “wise” young employee would probably shy away from their use in order to prevent their discharge from the firm as a result of their rudeness.

Use of cell phone/PDA/Pager/blackberry etc. during class will result in the dismissal of the student from that particular class and the receipt of a “zero” for that class’s particular assignment, exercise, exam, quiz, etc. The second use of the device during class will result in the withdrawal of the student from the class by the instructor. Withdrawal of the student by the instructor after the official “drop date” will result in the grade of a “WF” for the student.

### **Note**

Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the counselor working with disabilities at (678) 915-7391 as soon as possible to better ensure that such accommodations are implemented in a timely fashion.