Instructor Information
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Course web page: http://cenotes.tamu.edu/

Teaching Assistant
Joshua Bronstad, E-mail: jlb2244@neo.tamu.edu

Class Hours
Lecture: Tuesday and Thursday, 12:45 – 1:35 pm, Room CE 104
Lab: Tuesday, 2:20 pm - 5:10 pm, Room CE 104

Office Hours
Monday, 3-4 pm, and Thursday, 2-3 pm, or by appointment through e-mail.

Course Description
The course focuses on the overall procedure of design including structural analysis, load
determination, codes and standards, structural systems, design drawings and specifications,
and cost comparisons as applied to buildings, bridges or special structures.

Course Objective
The objective of this course is to prepare students to analyze and design structural elements and
systems according to the IBC model building code and specific material codes, such as the ACI
Building Code Requirements for Structural Concrete and the AISC Manual of Steel
Construction.

Course Prerequisites
Introduction to Geotechnical Engineering (CVEN 365), Structural Concrete Design (CVEN 444)
and Structural Steel Design (CVEN 446); or permission of the instructor.

Course Content
1. Identify structural building types
2. Evaluate appropriate mathematical models for structural building types
3. Determine loading criteria for structural systems
4. Determine critical loading patterns for design
5. Analyze the effect of loads on structural systems
6. Design members to resist applied loads and satisfy performance objectives
7. Develop design drawings for structural systems and members to be used to prepare
construction documents

Department of Civil Engineering
Texas A&M University

CVEN 483 – Analysis and Design of Structures

Spring 2006
ABET Professional Content
1. Preparation for engineering practice;
2. Major design experience;
3. Engineering design incorporating of engineering standards;
4. Engineering design incorporating realistic constraints that included economic, environmental, health and safety.

ABET Outcomes Addressed
1. Ability to apply knowledge of basic mathematics, science and engineering;
2. Ability to design a civil/ocean engineering system to meet desired needs;
3. Ability to formulate and solve civil/ocean engineering problems;
4. Understanding of professional and ethical responsibility;
5. Ability to communicate effectively (verbal and written);
6. Recognition of the need to engage in life-long learning;
7. Ability to use techniques, skills, and modern tools necessary for civil/ocean engineering practice;
8. Ability to use computers to solve civil/ocean engineering problems

Textbook

References
• ACI Committee 318 (2005), Building Code Requirements for Structural Concrete (ACI 318-05) and Commentary (ACI 318R-05), American Concrete Institute, Farmington Hills, Michigan.

Grading
Final grades will be determined from an overall average, as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Participation</td>
<td>5%</td>
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<tr>
<td>Homework (weekly)</td>
<td>10%</td>
</tr>
<tr>
<td>Project (term)</td>
<td>60%*</td>
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<tr>
<td>Exam (mid-term)</td>
<td>25%</td>
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<td><strong>100%</strong></td>
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* The project grade includes a team evaluation.

Letter grades will be determined as follows:
A ≥ 90, 90 > B ≥ 80, 80 > C ≥ 70, 70 > D ≥ 60, F < 60

All work must be presented in a neat and professional manner in order to receive full credit for correct answers. See guidelines provided in this syllabus.

Attendance
Attendance and class participation are mandatory. Quizzes or in-class assignments that are given when you are not in class cannot be made up.
**Late Homework Policy**
All homework and project assignments must be turned in at the beginning of class on the day the assignment is due. Homework assignments turned in after the beginning of class will lose 20% of the total points possible for each day it is late (i.e., an assignment received at 5 pm on the day it is due rather than at the beginning of class will lose 20%).

**Presentation Standards for Assignments**
It is expected that you are already know and follow professional practices for presentation of your work. However, the following presentation standards are provided as minimum requirements. These standards must be followed in order to receive full credit for your work.

1. Work must be prepared on engineering paper. Please use pencil to avoid crossing out mistakes. Work that is printed from a computer may be on standard printer paper.
2. Begin each problem on a new sheet of paper. Use only one side of the paper. Staple the pages for the complete assignment together.
3. The complete solution to each problem must be neat and legible. Homework that cannot be deciphered will receive a warning the first time and a grade of zero if this continues to be a problem.
4. Provide a title page with
   - Course and section number
   - Full name and signature
   - Assignment number
   - Date assigned and date due
5. For additional pages use heading with name, date, course number and page number.
6. Use consistent units and state them clearly.
7. Organization of problem solution:
   - Problem: Give problem number.
   - Given: State known facts about the problem.
   - Required: State what you intend to find. Be clear and concise.
   - Solution: Present the solution in a stepwise logical fashion. Add comments for clarity and clearly list all assumptions. Include appropriate diagrams and sketches with pertinent dimensions, etc. Clearly indicate the answer. UNITS!
8. Additional guidelines will be provided in class for use in preparing professional reports and presentations.
OFFICIAL NOTICES

Extracts from Student Rules

Section 10 of Student Rules

• “10.1 The course instructor shall provide in writing the following information to the class during the first class meeting:
  o A statement of the nature, scope and content of the subject matter to be covered in the course.
  o All course prerequisites as listed in the catalog.
  o All required course text and material.
  o The grading rule, including weights as applicable for tests, laboratory assignments, field student work, projects, papers, homework, class attendance and participation and other graded activities in the calculation of the course grade. No such rule should be in contradiction to other provisions of the University Student Rules.”

• “10.4 Passing grades for graduate students are A, B, C and S.”

Section 7 of Student Rules

• “The university views class attendance as an individual student responsibility. Students are expected to attend class and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due. This information should be provided on the course syllabus, which should be distributed at the first class meeting. Graduate students are expected to attend all examinations required by departments or advisory committees as scheduled formally.”

• “7.1 The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for absence. Among the reasons absences are considered excused by the university are the following:”
  o “7.1.1 Participation in an activity appearing on the university authorized activity list. (see List of Authorized and Sponsored Activities)
  o “7.1.2 Death or major illness in a student’s immediate family. Immediate family may include: mother, father, sister, brother, grandparents, spouse, child, spouse’s child, spouse’s parents, spouse’s grandparents, stepmother, step-father, step-sister, step-brother, step-grandparents, grandchild, step-grandchild, legal guardian, and others as deemed appropriate by faculty member or student’s academic dean.
  o “7.1.3 Illness of a dependent family member.
  o “7.1.4 Participation in legal proceedings or administrative procedures that require a student’s presence.
  o “7.1.5 Religious holy day. (See Appendix IV.)
  o “7.1.6 Illness that is too severe or contagious for the student to attend class (to be determined by Health Center or off-campus physician).
  o “7.1.7 Required participation in military duties.
  o “7.1.8 Mandatory admission interviews for professional or graduate school which cannot be rescheduled.”

• “7.2 If the student is found to be too ill to attend class by a Health Center physician, the director of the Health Center or his/her representative will, on request of the student, confirm this fact.”

• “7.3 If an off-campus physician provides evidence of a student’s illness, the excuse documentation must contain the date and time of the illness and doctor’s opinion that the student was too ill to attend class. If a physician determines that the student is not ill, he or
she will not receive an excuse. If no evidence is available, the instructor will decide whether makeup work will be allowed. “

- “7.5 If the student is seeking an excused absence, the student must notify the instructor as soon as possible after the absence, but no later than the end of the second working day after the last date of absence. If the absence occurs the same day as a scheduled exam or other graded procedure, the student must notify his/her instructor or department by the end of the next working day after the absence in order to ensure full rights. The student is responsible for providing satisfactory evidence to the instructor within one week of his or her absence return to substantiate the reason for absence. If the absence was excused, the instructor must either provide the student an opportunity to make up the exam or other work missed or provide a satisfactory alternative completed within 30 calendar days from the last date of absence.”

- “7.6 The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence.”

**Americans with Disabilities Act (ADA)**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

**Academic Integrity Statement**

- Academic Integrity is taken very seriously in this course. Just as ethical conduct is essential to the engineering profession, academic integrity is critical to ensure a fair and positive learning environment and to make certain that each student receives the grade he or she has earned.

- “An Aggie does not lie, cheat, or steal or tolerate those who do.” Students are expected to understand and abide by the Aggie Honor Code presented on the web at: [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor) No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. These are more fully defined in the above web site. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.

- Cheating on quizzes and exams will not be tolerated. Cheating will be reported and handled in accordance with the Aggie Honor System Process.

- All examinations will be closed book; “looking at another student's examination or using external aids (for example, books, notes, calculators, conversation with others, or electronic devices)” during these examinations is a violation of Texas A&M Aggie Honor Code, Cheating, unless specifically allowed in advance by the instructor.

- Unless specifically allowed in advance by the instructor, all assignments and homework in this class are expected to be completed based on individual effort. Copying the work of others, including homework, is a violation of Texas A&M Aggie Honor Code, Cheating.

- The handouts used in this course are copyrighted. By “handouts,” I mean all materials generated for this class, which include but at not limited to syllabi, notes, quizzes, exams, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts unless I expressly grant permission.