

**FLORIDA INTERNATIONAL UNIVERSITY
COLLEGE OF ENGINEERING AND COMPUTING
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING**

**CGN 4930/CGN 5930 – Design of Temporary Structures in Construction, Fall 2010
Course Policies and Procedures**

INSTRUCTOR: Caesar Abi Shdid, Ph.D, P.E.
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MEETING PERIODS: M 4:10 - 5:25 pm Room EC 1104
W 4:10 - 5:25 pm Room EC 1104

OFFICE HOURS:* T and R 2:00 – 4:00 pm
OR by appointment.

* Office hours terminate on the last day of regular classes, i.e., no office hours are maintained during and after the final exams period.

PREREQUISITE: CES 4702 Reinforced Concrete Design.

COURSE WEBSITE: <http://lms.fiu.edu>

DESCRIPTION: Structural design of temporary structures in civil engineering projects. Design of scaffolds, formwork, cables, temporary foundations, rails, and project signs. Shoring, rigging and bracing, trenching, and temporary ramps.

METHOD: Two 75-minutes-period lectures.

OBJECTIVES: To introduce students to the different types of temporary structures and their use in civil engineering; To understand why temporary structures are used in civil engineering; To provide an overall view of how to design different types of temporary structures; To introduce the students to the different design and building codes covering the design and use of temporary structures.

REQUIRED TEXTS:* Handbook of Temporary Structures in Construction, by Robert Retay. McGraw Hill, 1996.

* Required text and a calculator shall be in the possession of every student at all times during the class. Student not having any of these items will be asked to leave the class room.

SOFTWARE: None.

SUPPLIES: None.

REFERENCES: Reinforced Concrete Design, 6th ed. By Limbrunner and Aghayere. Prentice Hall Inc. 2006.
Illustrated 2003 Building Code Handbook. By Patterson. McGraw-Hill Publishers Inc., 2004.

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| <u>GRADING SYSTEM:</u> | Exam | 125% |
| | Exam 2 | 25% |
| | Final Exam | 30% |
| | Homework | 10% |
| | Attendance | <u>10 %</u> |
| | Total | 100% |

Note: Final Exam is mandatory and is not cumulative and will be administered on the final exam date. NO make-ups or incompletes will be given regardless the situation.

No extra-credit projects, homework, or any other form of extra-credit work will be permitted at the end of the semester regardless of the final grade. Students' final grade is not negotiable. If a student wants to inquire about the final grade, the inquiry shall be in a formal written letter to the instructor within one week of the final grades being posted. The Instructor's reply to the inquiry is final and any additional attempts to negotiate the grade will result in the Instructor dropping the grade to the next lower letter grade.

All homework and exam grades will be posted on CE6. Erroneous grades on CE6 need to be reported within 2 weeks of posting. No grade changes will be made after this period. Course grades will be computed according to the following scale:

A=90-100; B⁺=87-89.9; B=80-86.9; C⁺=77-79.9; C=70-76.9; D=60-69.9; F<60.

Final class grades (NOT individual exams) will be curved so that the final class average is 70%.

QUIZZES: Pop Quizzes are not prescheduled and will be given during class time without any previous notice.

EXAMS: Exams are designed to encourage critical thinking. Exams will be of the problem solving type. All exams in this course will be closed-book and closed notes. Some tables and charts will be provided by the instructor. Any formulas on programmable calculators will constitute cheating on the exam, and will result in a grade of "F" on the course. NO makeup exams will be administered regardless. Students arriving late to an exam will NOT receive any time extension. Exams will be passed around by the Instructor in person and during class time.

HOMEWORK: Assigned homework is due at the beginning of the lecture period on the front desk in the classroom. **No late homework will be accepted regardless.** If a student cannot make it to class, the homework can be submitted by email,

fax, or dropped in the Instructor's mailbox. However, this submission has to also be before the homework submission deadline as outlined above. Homework should be worked on engineering paper and shall be stapled. All sketches should be neatly drawn using a straight edge, and answers underlined. Homework may be graded by detailed checking or based on overall attempt. Sloppy, disorganized, and poorly done homework will not be graded. **Zeros will be given to homework not done according to the above-stated criteria. The homework grade will be computed according to these policies. Copying of homework is strictly forbidden, students doing so will be given a grade of F on the class.** No homework resubmission will be allowed under any circumstances.

Professional engineers communicate ideas through their design calculations and construction documents. Many times final engineering calculations, drawings and specs are submitted to clients as a part of the construction permitting and bidding processes. These calculations are a reflection of your competency as an engineer and on the quality of the product that your company produces. Part of your engineering training includes learning how to prepare engineering calculations and documents neatly and in the proper format. In CGN 4930/5930, the homework policy is designed so as to capture as much as possible this spirit of professionalism sought after by the Engineering profession. Through this policy this course emphasizes the importance of training students to acquire the skills and habits necessary for presenting a finished product that exhibits the highest of professional format and reflects their abilities.

ATTENDANCE: **ATTENDANCE IS REQUIRED.** Instructor will take roll everyday.

Absence from class will result in points taken off the Final Grade for any given student not present during any roll (One point off of the final average for each absence).

Those who arrive late to class will NOT be allowed into the class and will NOT get to sign in later and will be considered absent. This rule will be implemented starting the second week of classes. For delays caused by emergencies, student must call and inform the instructor for permission to enter late to the class.

Those who leave the classroom before the class is dismissed by the instructor will get 10 points taken off their following exam (unless prior permission was granted by the instructor).

Attendance policy will be enforced starting on the last day of the drop-and-add period. Students missing to sign the attendance sheet will not get the chance to sign it later, as the instructor can not verify the actual attendance of the student.

STUDENT RESPONSIBILITIES:

1. Attend all classes and turn in homework when due.

2. Be fully prepared for pop quizzes at any time.
3. Ask questions in class.
4. Be aware of all the announcements or changes made by the instructor for this course.
5. Check the course website **at least once per day**.
6. Not to engage in talking or disruptive behavior in the class.
7. Read the text assignments before the class and come prepared with questions.
8. Use office hours whenever possible for assistance and advisement.
9. Work extra problems to understand each topic. Seek timely help if you are not making satisfactory progress.
10. Be honest in all homework, quizzes and tests. Be aware of the Honor System of Florida International University.
11. Be disciplined, responsible and professional with respect to conduct and presentation.

ACADEMIC HONESTY: Academic dishonesty is defined in the current edition of the Student Conduct Code. Students violating the Academic Dishonesty Policy as stated in the current Student Conduct Code will be penalized the maximum allowed by the University. The student will also be immediately dismissed from this course and will receive a final grade of “F”. All course assignments are individual assignments, unless otherwise stated by the instructor. This applies to all term papers, homework, projects, exams and any other assignments to be graded. No student shall receive, offer or give assistance not authorized by the professor in the preparation of any assignment.

ACADEMIC MISCONDUCT: "Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct,

they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook."

STUDENTS WITH DISABILITIES: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must provide this documentation to the Instructor at the beginning of the semester when requesting accommodation.

FIELD ACTIVITIES: University policy requires each student to complete a waiver of liability form as provided by the professor, prior to participating in university sanctioned activities off campus. Completed forms must be in the custody of the professor prior to the onset of any off-campus field trip.

RELATIONSHIP OF COURSE TO PROGRAM OBJECTIVES:

This course accomplishes, to various extents, the following ABET-related objectives and outcomes:

Objective 1 - Technical Proficiency: Our graduates will have ability to:

- 3a. Apply knowledge of mathematics, science, and engineering to solve civil engineering problems;
- 3c. Design a system, component, or process to meet desired needs related to at least four of the technical areas encompassed by civil engineering;
- 3e. Identify, formulate, and solve civil engineering problems;

Objective 2 - Communication: Our graduates will have an acceptable level of proficiency in:

- 3g. Written, oral, and graphical communication.

Objective 4 – Lifelong Learning: Our graduates will:

- 3i.1. Recognize that graduation is a first step in their development of professional engineering competency;
- 3i.2. Recognize the need for lifelong learning to maintain and enhance their professional practice of civil engineering.

Objective 5 – Ethical Behavior: Our graduates will:

- 3f. Have an understanding of professional and ethical responsibility.

The outcome identifiers, herein used (e.g., “3h”), correspond to the same calling system that is used in the ABET Criteria for Accrediting Engineering Programs (www.abet.org).

FALL 2006 COURSE OUTLINE:

SUBJECT AND COVERAGE*

1. Course Introduction

2. Defining Temporary Structures
 - a. Why Temporary Structures are Used
 - b. Where and When to Use Temporary Structures
3. Loads on Temporary Structures
4. Design Codes
5. Design of Temporary Foundations
6. Design of Earth Retaining Structures
7. Design of Concrete Formwork
 - a. Slabs
 - b. Beams
 - c. Columns
 - d. Walls
8. Design of Scaffolds and Elevated Work Platforms
9. Rigging and Bracing
 - a. Design of Cables
10. Design of Temporary Project Signs
11. Design of Temporary Construction Ramps

*One or more subjects, or part of a subject can be covered in a particular lecture depending on available time for the instructor. The instructor further reserves the right to make course changes (content and schedule) as he deems necessary and appropriate at any time during the academic semester.