

University of Connecticut  
CE 2010 Professional Issues in Civil & Environmental Engineering  
Spring 2010 Course Syllabus

**Class meets:** CAST 212    Tuesdays 3:30-4:45 PM  
See attached class schedule for a list of topics for each class period.

**Instructor:**

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**Course Description:**

Issues in the practice of Civil & Environmental Engineering: professional ethics, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), construction management and professional development.

**Course Purpose:**

All undergraduate majors in Civil Engineering must take this course three times; twice before enrolling in CE 4910, “Civil Engineering Projects”, and once as part of CE 4910. This course covers topics important in preparing students to responsibly engage in the civil engineering profession that are required for accreditation of the program (see next page). Because these topics are inherently practice-oriented, most classes are taught by practicing professionals who have extensive experience in the civil engineering profession.

**Course Outcomes:**

This course contributes to students’ acquisition of the following:

1. an understanding of professional and ethical responsibility
2. an ability to communicate effectively
3. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
4. a recognition of the need for, and an ability to engage in life-long learning
5. a knowledge of contemporary issues
6. understanding of professional practice issues such as procurement of work, bidding versus quality-based selection processes, how design and construction professionals interact to construct project, importance of licensure and continuing education

**Grading and Course Work:**

Grading for the course will be on a Satisfactory/Unsatisfactory (S/U) basis. A brief quiz will be given at the end of each class session in which there is a scheduled presentation by an outside speaker. Passing the quiz is worth one point. On some classes on which there is no outside speaker, such as the first day of class and the capstone design course presentations on March 2 and April 27, the “quiz” will simply be signing an attendance sheet. To receive a satisfactory grade, each student must earn 10 points on the quizzes (about 70% of the possible points). If a student fails to earn 10 points on the quizzes, he/she may arrange with the instructor to complete an equivalent alternative assignment to make up the missing points.

## **CRITERIA FOR ACCREDITING UNDERGRADUATE PROGRAMS IN CIVIL ENGINEERING (from the Accreditation Board for Engineering and Technology)**

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The elements inside the boxes are addressed and assessed in CE 2010.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEO's)**

*These are expected accomplishments of graduates during the first few years after graduation.*

**The Civil Engineering undergraduate program educational objectives are to prepare alumni/ae with the knowledge and skills needed to:**

- **actively contribute to the advancement of engineering practice** in the public or private sectors in the technical areas of environmental, geotechnical, structural, transportation, and water resources engineering;
- **recognize the importance of, and follow a path that can lead to, licensure** as professional engineers who design and construct solutions to civil engineering problems in the natural and built environments; and
- **adopt and continuously practice life-long learning** through post-graduate and professional education.

### **PROGRAM OUTCOMES**

*This is what students are expected to know and be able to do by the time of graduation*

- a.) an ability to **apply knowledge of mathematics, science, and engineering**
- b.) an ability to **design and conduct experiments**, as well as to **analyze and interpret data**
- c.) an ability to **design a system, component, or process** to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- d.) an ability to **function on multi-disciplinary teams**
- e.) an ability to **identify, formulate, and solve engineering problems**
- f.) an **understanding of professional and ethical responsibility**
- g.) an ability to **communicate effectively**
- h.) the broad education necessary to understand the impact of engineering solutions in a **global, economic, environmental, and societal context**
- i.) a recognition of the need for, and an ability to **engage in life-long learning**
- j.) a knowledge of **contemporary issues**
- k.) an ability to use the **techniques, skills, and modern engineering tools** necessary for engineering practice.

### **CE PROGRAM CRITERIA (Defined by ASCE)**

#### **Curriculum: proficiency in ...**

- mathematics through differential equations, probability and statistics, calculus-based physics and general chemistry
- a minimum of four major civil engineering areas

#### **Curriculum: ability to ...**

- conduct laboratory experiments
- critically analyze and interpret data in more than one area of civil engineering
- perform civil engineering design by means of design experiences throughout the curriculum

#### **Curriculum: understanding of professional practice issues such as ...**

- procurement of work
- bidding versus quality-based selection processes
- how design and construction professionals interact to construct project
- importance of licensure and continuing education

## CE 2010 Class Schedule and List of Topics – Spring 2010

As of December 8, 2009 – tentative, subject to update

<b>Date</b>	<b>Speaker</b>	<b>Topic</b>
19-Jan	Instructor	Introduction
26-Jan	Joe Balskus, Tighe and Bond, Inc.	Contemporary Issues in Engineering
2-Feb	Kurt Salmoiraghi, Federal Highway Administration	Procurement of work; bidding and selection process
9-Feb	Laurann Asklof, Gordon Muir and Foley, LLP	Legal Issues in Engineering OR Professional and Ethical Responsibility
<b>17-Feb</b>	SOE Career Fair (all CE 2010 and CE 4910 students should attend)	NOTE: ON <b>WEDNESDAY!!</b>
23-Feb	Paul Schmidt, URS, Inc.	Career Development
2-Mar	CE 4910 Students	Project Proposal Presentations
<b>9-Mar</b>	<b>SPRING RECESS</b>	
16-Mar	Carla Tillery Fitzgerald and Halliday, Inc.	Leadership and Development
23-Mar	James Ford, Beta Group, Inc.	Public Involvement and Interaction
30-Mar	Joe Hallisey, Parsons Brinckerhoff	Service in Professional Organizations
6-Apr	Roger Krahn, URS, Inc.	Social, Environmental, and Economic Impacts of Engineering Solutions
13-Apr	Robert Sullivan, Standard Builders, Inc.	Construction Risk and Liability
20-Apr	Toby Hansson, Stantec	Interaction of Design and Construction Professionals
27-Apr	CE 4910 Students	Final Project Presentations