

University of Connecticut
CE 4900W Civil Engineering Projects I
Syllabus – Fall 2016

Class meets: Tuesdays and Thursdays 2:00-5:00 PM (See attached class schedule)

Course Description:

Issues in the practice of Civil & Environmental Engineering: management, business, public policy, leadership, importance of professional licensure, professional ethics, procurement of work, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), and construction management. Students working singly or in groups prepare proposals for Civil Engineering design projects, oral presentation and written reports.

Course Purpose:

All undergraduate majors in Civil Engineering must take this course. This course covers topics important in preparing students to responsibly engage in the civil engineering profession as required for accreditation of the program (see next page). Because these topics are inherently practice-oriented, most lectures are taught by practicing professionals who have extensive experience in the civil engineering profession. Students will also form groups to prepare proposals for a design project they will conduct during the next semester in the follow-on course, CE 4920W *Civil Engineering Projects II*.

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. an ability to design a system, component or process in more than one civil engineering context;
7. an ability to explain basic concepts in management, business, public policy, and leadership; and
8. an ability to explain the importance of professional licensure.

Course Writing Component:

This course (CE 4900W) carries a "W" designation, and thus includes an intensive writing component, including instruction and feedback. This writing component appears as follows:

- Students will write a three-page application for a position on one of the project teams, will receive feedback and will present their qualifications in an oral 'job interview'.
- Students will write a three-page essay on a case study in engineering ethics, then receive feedback on their writing and re-write and re-submit the essays
- Students will write a proposal for a design project that will be implemented in the subsequent semester. Each student will write a minimum of five pages in the proposal; each student's contribution must be clearly indicated.
- Each student must pass the writing component in order to pass the course
- Exact dates and times for turning in, going over, and turning in rewrites will be given to you by your individual faculty project advisor

Grading Contributions

Course Component	Percent of Grade
Job application	10
Job application rewrite	10
Job interview	10
Ethics essay	10
Ethics essay rewrite	10
Proposal Presentation	25
Proposal Written Report	25

Other grade considerations:

- Attendance at seminars, presentations, interviews and workshops are required. Deductions in grade will be made if there are more than two unexcused absences
- This semester there will be two teams assigned to most projects. A grade increase, of one step, will be awarded to everyone on the team judged to have produced the best proposal (consisting of both written and oral parts)
- Even for team reports and presentations, differing individual grades may be assigned

CRITERIA FOR ACCREDITING UNDERGRADUATE PROGRAMS IN CIVIL ENGINEERING (from the Engineering Accreditation Commission of ABET, Inc.)

The elements inside the boxes are addressed and assessed in CE 4900W.

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 practice and profession of engineering** in the public or private sectors in the technical areas of environmental, geotechnical, structural, transportation, and water resources engineering;
- **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
- **practice life-long learning** through post-graduate and professional education.

STUDENT 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)

The program must prepare graduates to ...

- apply knowledge of mathematics through differential equations, calculus-based physics, chemistry and at least one additional area of basic science, consistent with the program educational objectives;
- apply knowledge of four technical areas appropriate to civil engineering
- conduct civil engineering experiments and analyze and interpret the resulting data;
- design a system, component or process in more than one civil engineering context;
- explain basic concepts in management, business, public policy, and leadership; and
- explain the importance of professional licensure.

TENTATIVE CE 4900W Meeting/Seminar Schedule

Date	Time	Tuesday Topics
Aug. 29	2:00 PM	Introduction (available projects, etc.) + Senior requirements (Lozefski)
Aug. 31	2:30 PM	Resume writing and interviewing presentation (Bau)
Sep. 5	3:30 PM	Applications are due + TBA*
Sep. 7		Seminar on Job interviewing (Townsend)
Sep. 12	2:00 PM	TBA*
Sep. 14		Job interview or writing review ⁺
Sep. 19&21	2:00 PM	Job interview or writing review ⁺
Sep. 26&28	2:00 PM	Job interview or writing review ⁺
Oct. 3&5	2:00 PM	Job interview or writing review ⁺
Oct. 10	2:00 PM	Project assignments followed by meeting with advisor and TBA
Oct. 12		Team meetings
Oct. 17	2:00 PM	Engineering ethics seminar (Benedetti) +2 nd writing assignment given
Oct. 19		Team/ethics partners meetings (bene???)
Oct. 24		Team/ethics partners meetings
Oct. 26	2:00 PM	Teamwork seminar (Townsend)
Oct. 31	2:00 PM	Second ethics seminar (Benedetti)
Nov. 2		Team/ethics partners meetings
Nov. 7	2:00 PM	Ethics writing due
Nov. 9		TBA*
Nov. 14&16	2:00 PM	Oral presentations of Ethics cases & team meetings
THANKSGIVING BREAK		
Nov. 28&30	2:00 PM	Project Proposal Presentations
Dec. 5&7	2:00 PM	Project Proposal Presentations
WRITING (DUE DATES & DEADLINES ARE MOSTLY TBD)		
	TBD	Applications returned and meetings to review are set-up
	TBD	Rewrite due – Ethics Essay Assigned
	TBD	Ethics Essay due
	TBD	Essay returned and meetings to review are set-up
	TBD	Rewrite due
	TBD	Draft of written proposals due
	TBD	Draft returned
Dec. 9	3:00 PM	Final written project proposals due
⁺ Individual schedules will be determined. When not scheduled for either, you are free! Many dates available for trips to sites. If there is a conflict with presentations, get permission first * TO BE ANNOUNCED		