

Tennessee Technological University
Department of Civil & Environmental Engineering
CEE 4920 – Professionalism and Ethics
Required
Fall Semester 2007, Spring Semester 2008

2007 Catalog Data: CEE 4920. Professionalism and Ethics. Lecture 1. Credit 1.
Prerequisite: Senior Standing. A discussion of the ethical, social and economic considerations in engineering practice; professional and technical societies.

Suggested Text: Engineering Ethics; Concepts and Cases (2005, 3rd Edition). Harris, Charles; Pritchard, Michael S.; and Rabins, Michael).

Reference: None

Coordinator: David H. Huddleston, Professor and Interim Dean College of Engineering

Goal: The goal of CEE 4920 Professionalism & Ethics is to introduce students to the professional and ethical responsibilities inherent in the civil engineering profession, the significance of professional licensure, and some of the business, professional, and ethical challenges introduced by cultural differences.

Course Learning Objectives:

1. Professionalism Component:
 - a. The student will be able to describe society's demands on civil engineering graduates.
 - b. The student will be able to identify agencies and resource materials that define the current professional registration process in a jurisdiction.
 - c. The student will be able to list the professional registration requirements in Tennessee and other jurisdictions.
 - d. The student will be aware of Tennessee law pertaining to engineering practice (Title 62), and the Rules of the Tennessee State Board of Architectural and Engineering Examiners.
 - e. The student will be able to explain the contributions made by professional societies.
 - f. The student will be able to explain the need for life-long learning and continuing education and will be able to describe the professional development requirements for licensure.
 - g. The student will be able to apply standards of professional and ethical responsibility to determine appropriate action regarding sexual harassment and non-discriminatory practice.
 - h. The student will be able to apply relevant techniques and skills to market themselves to potential employers.
2. Ethics Component:
 - a. The student will be able to identify current code of ethics resource material pertaining to ASCE, NSPE, NCEES, ABET, and others.
 - b. The student will be able to explain and discuss the impact of engineering ethical canons on professional practice.
 - c. The student will be able to list and discuss key concepts and problem-solving techniques used to resolve truthful, ethical, and moral problems in business, public policy, and public administration.
 - d. The student will be able to list and discuss alternative techniques to identify and evaluate ethical risks in business, public policy, and public administration.
3. International engineering professional ethics:
 - a. The student will be able to identify and discuss how cultural differences can influence professional and ethical expectations.
 - b. The student will be able to explain and discuss the impact of domestic engineering ethical canons on international engineering practice and business decisions.

Course measurable outcomes:

Students will be expected to:

1. recognize ethical engineering problems when they occur;
2. locate and apply the Codes of Ethics for ASCE, NSPE, and ABET;

3. locate and apply the Rules of a Board of Architectural and Engineering Examiners in selected jurisdictions;
4. complete the TTU online sexual harassment training and pass the associated online examination;
5. locate and document resource material from professional organizations that can assist with ethical decision making and professional issues; and
6. Initiate the professional registration process by graduating with the BSCE degree and taking the FE exam.

Topics covered: (1 class per week, 55 minutes each)

1. General introduction (1 class)
2. Career services and professional presentation(1 class)
3. Non-discrimination and sexual harassment in the workplace (1 class)
4. Engineering codes of ethics, ethical decision making guidelines (3 classes)
5. Case study review and discussion (1 class)
6. Professional registration, professional societies, and obligations (3 classes)
7. ASCE Body of Knowledge, curriculum design, and life-long learning (1 class)
8. External presentations (2 classes)
 - (a) Professional registration (b) Company perspective on licensure and business ethics
9. Testing and assessment (1 class)

Contribution of the course to meeting professional component:

This course is part of general education engineering topics in the curriculum.

ABET category content as estimated by faculty member who prepared this course description:

Engineering Science: 0 credits or 0%
 Engineering design: 0 credits or 0%
 Other: 1 credit or 100%

Relation of course to program outcomes:

- Outcome 3: The graduates will be prepared to begin the professional registration process.
 Outcome 5: The graduates will have effective communication skills.
 Outcome 9: The graduates will have an understanding of their social and ethical responsibilities as civil engineers.
 Outcome 10: The graduates will have an understanding of the need to continue their education through life-long learning.
 Outcome 12: The graduates will have an understanding of fundamental principles and key concepts in engineering management, business, public policy, and leadership.

Relation of course to ABET criteria:

<u>General Criteria</u>	Bloom's Level of Achievement
(3f) Professional and ethical responsibility	3
(3g) Effective Communication	3
(3h) Broad education necessary for global/societal contacts	2
(3i) Need for life-long learning	3
(3j) Knowledge of contemporary issues	2

<u>Program Criteria</u>	Bloom's Level of Achievement
1. Explain basic concepts in management, business, public policy, and leadership	1
2. Explain the importance of professional licensure	2

Computer usage: Online course management and submission of assignments.

Laboratory projects: None