STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

SOET 378 – Ethics for Engineers

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SCHOOL OF ENGINEERING TECHNOLOGY
ELECTRICAL ENGINEERING TECHNOLOGY & ENGINEERING
SCIENCE DEPARTMENT

SPRING 2018

SOET 378– Ethics for Engineers

A. TITLE : Ethics for Engineers

B. COURSE NUMBER: SOET 378

C. CREDIT HOURS: 3

D. WRITING INTENSIVE COURSE: Yes

E. COURSE LENGTH: 15 Weeks

F. SEMESTER(S) OFFERED: Fall and Spring

G. HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY: 3 hours per week

H. CATALOG DESCRIPTION: This course extends the student analytical skills to moral deliberation. Topics covered include engineering code of ethics, responsibility in engineering, the social and value dimensions of technology, trust and reliability, engineers in organizations, engineers and environment, international engineering professionalism, global issues, respect for diversity, case studies analysis, and research term paper.

I. PRE-REQUISITES: Junior level status or permission of instructor.

J. GOALS (STUDENT LEARNING OUTCOMES)

ABET Criterion (3) Satisfied in SOET 378 – Ethics for Engineers
An ability to identify, analyze, and solve broadly-defined engineering technology problems (f)
An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature (g)
An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity (i)
An knowledge of the impact of engineering technology solutions in a societal and global context (j)

Course Objectives	Institutional Student Learning Outcomes (ISLOs) and ABET Criterion (f, g, i, j)
Students will demonstrate their ability to analyze engineering ethics cases.	2. Critical Thinking 3. Social Responsibility - ABET (f)
Students will analyze different ethical cases and decision making where the engineer is working in another country. Diversity and point of view of all students are respected	4. Social Responsibility - ABET (f, i)
Research about engineering ethics in another country, and compare engineering code of ethics between that country and United States. Student will submit ten pages single space paper about their research, and demonstrate PowerPoint presentation.	1. Communication Skills 4. Social Responsibility - ABET (g, j)

K. TEXTS:
   Charles E. Harris, Jr., Michael S. Pritchard, and Michael J. Rabins,
   Engineering Ethics - Concepts and Cases, 6th Edition, 20 Channel Center St.
   Boston, MA 02210: Wadsworth Cengage Learning, 2014.

References:

JOURNALS WITH ARTICLES ON ENGINEERING ETHICS AND CASES:
(1) Science and Engineering Ethics, Opragen Publications

WEBSITES:
(1) The IEEE Society on Social Implications of Technology (SSIT):
    http:radburn.rutgers.edu/Andrews/projects/ssit/default.htm
(2) Ethics Center for Engineering and Science, Case Western University:
    http://onlineethics.org
(3) *National Institute for Engineering Ethics:*

L. <u>EQUIPMENT</u>: None

M. <u>GRADING METHOD</u>: A-F

N. <u>MEASUREMENT CRITERIA/METHODS</u>: Weekly Cases and Analysis, Discussion Board, and Research Paper.

O. <u>DETAILED TOPICAL OUTLINE</u>:

    I.   Why Professional Ethics
- What is a Profession?
- Engineering and Professionalism
- Two Models of Professionalism
- Three Types of Ethics or Morality
- The Negative Face of Engineering Ethics
- The Positive Face of Engineering Ethics

    II.   Responsibility in Engineering
- Engineering Standards
- The Standard of Care
- Responsible Oversight
- Blame-Responsibility and Causation
- Liability
- Design Standards
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    III.   The Social and Value Dimensions of Technology
- Technology is Socially Embedded
- Technology Affects Society
- Social Affects Technology
- Technology and Social Policy
- Technology and Public Policy
- Evaluating Technology
- Critical Attitude Toward Technology

    IV.   Trust and Reliability
- Honesty
- Forms of Dishonesty
- Why is Dishonesty Wrong?
- Dishonesty on Campus
- Dishonesty in Research and Testing
- Confidentiality
- Intellectual Property
- Expert Witnessing

- Informing the Public
- Conflicts of Interest

V. Risk and Reliability in Engineering
- The Engineer's Approach to Risk
- The Public's Approach to Risk
- Communicating Risk and Public Policy
- Difficulties in Determining the Causes and Likelihood of Harm
- The Engineer's Liability for Risk
- Becoming a Responsible Engineer Regarding Risk

VI. Engineers in Organizations
- Avoiding Blind Spots
- Autonomy and Authority
- Groupthink
- Engineers and Managers
- Proper Engineering and Management Decisions
- Responsible Organizational disobedience
- Disobedience By Protest
- Employee and Employer

VII. Engineers and Environment
- Environmental Imperatives in Engineering Codes and the Law
- The Environmental Challenge
- Responding to the Environmental Challenge
- Environmental Stewardship and Engineering Professionalism

VIII. Engineering in the Global Context
- The Emergence of International Engineering Standards
- An International Concept of Engineering Professionalism
- Ethical Resources for Globalized Engineering
- Economic Underdevelopment: The Problem of Exploitation
- Paying for Special Treatment: The Problem of Bribery
- Paying for Deserved Services: The Problem of Extortion

IX. 30 – Cases will be analyzed

X. Research paper (10-pages minimum)