SOROTI UNIVERSITY

INNOVATE AND CREATE

SCHOOL OF ENGINEERING AND TECHNOLOGY

BACHELOR OF ENGINEERING IN ELECTRONICS AND COMPUTER ENGINEERING

CPE4202: PROFESSIONAL ETHICS IN ELECTRONICS AND COMPUTER ENGINEERING

INTRODUCTION

YEAR 4 SEMESTER 2

By Matsiko Joshua

Outline

- Motivation
- Professional Ethics Definition
- Moral Dilemmas
- Objectives
- Organizational Stuff
- Course Contents
- Working Methods
- References

Motivation/Goal

Goal : The course will develop a framework on which professional and ethical issues can be analyzed, and build up an awareness of various views of ethical issues as well as professionals ethical rights and responsibilities.

Motivation

Why is it important?

- Preparation for Real-world Challenges. Addresses legal, social, and ethical dilemmas encountered in the profession (explicit or implicit ethical code).
- To promote responsibility and moral autonomy. Ethics encourages accountability in designing and implementing safe, reliable systems.
- Builds Trust. Establishes credibility with employers, clients, and society.
- Ensures Compliance and Integrity. Familiarizes students with laws and standards to avoid legal issues.
- Enhances Global Competence. Prepares students to work ethically in diverse, cross-cultural environments.
- Supports Sustainable Development.

Professional Ethics Definition

- Engineering Ethics is the study of moral issues and decisions confronting individuals engaged in engineering.
- The study of related questions about the moral ideas, character, policies, and relationships of people and organizations involved in technical activity.
- Ethos (Greek) = mores (Latin) meaning “customs”
- Morality (Latin mores) usually refers to any aspect of human action
- Ethics (Greek ethos) commonly refers only to professional behavior
- Personal ethics is a foundation of professional ethics.
- Principles of right and wrong

Moral Dilemmas

- Moral dilemmas are situations in which two or more moral obligations, duties, rights, or ideals come into conflict. (Neither of which resolves the situation in an ethically acceptable fashion)
- To resolve we must identify the factors, gather facts, rank moral considerations, consider alternative courses of actions, and arrive at a judgement.

Moral Dilemma Example

Joel, a data analyst for a major casino, is working after normal business hours to finish an important project. He realizes that he is missing data that had been sent to his coworker Vincent. Joel had inadvertently observed Vincent typing his password several days ago and decides to log into Vincent's computer and resend the data to himself. Upon doing so, Joel sees an open email regarding gambling bets Vincent placed over the last several days with a local sports book. All employees of the casino are forbidden to engage in gambling activities to avoid any hint of conflict of interest.

Joel knows he should report this but would have to admit to violating the company's information technology regulations by logging into Vincent's computer. If he warns Vincent to stop his betting, he would also have to reveal the source of his information. What does Joel do in this situation?

Objectives

The Course aims to provide students with understanding and skills on:

- Standards and professionalism in an ECE career
- Legal environment within which an ECE professional operates
- The professional societies that govern the behavior of computer engineering professionals
- Professional responsibilities to client, employer and public.

Course outcomes

On completing this course, the student should be able to:

- Appreciate the role of standards for a practicing computer engineering professional;
- Practice a computer engineering career with due regard to legal, ethical and social issues.

Organizational Stuff

- Course budget: 3 credit units (CUs)
- Evaluation criteria
  - Final examination (60%)
  - Continuous assessment (40%)
    - 2 Tests
    - Assignments (Individual and Group)

- Instructor contact information
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Course Contents

- The computer engineering profession and standards
- Computer engineering and society
- Ethics and the social context of computing
- Methods and tools for analysis of ethical arguments
- Risks and liabilities of safety-critical systems
- Intellectual property rights
- Privacy and civil liberties
- Social implications of the Internet
- Computer Misuse
- IEEE code of ethics
- Group work (20 hours)

Working Methods

- Weekly Course Slides for Self-studies
  - Self-study of assigned course slides shall be available
    - The material mainly consists of a set of slides
    - You are expected to use additional sources (e.g. references) to understand the provided material!
    - The provided material should help you to dig deeply into the topics, reflect on it and apply your acquired knowledge
- Weekly Lectures

References

- Baase, S, A Gift of Fire: Social, Legal, and Ethical Issues for Computers and the Internet, 2nd Edition, 2003, Prentice Hall
- Bowyer, K, Ethics and Computing: Living Responsibly in a Computerized World, 2nd Edition, 2000, Wiley & Sons
- Dejoie, R., Fowler, G., & Paradice, D, Ethical Issues in Information Systems, 1991, Boyd & Fraser Publishing Co
- Huff, C. & Finholt, T, Social Issues in Computing: Putting Computing in its Place, 1994, McGraw-Hill
- Johnson, D. G, Computer Ethics, 3rd Edition, 2001, Prentice Hall Johnson, D. G. & Nissenbaum, H, Computers, Ethics & Social Values, 1995, Prentice Hall
- Kizza, J. M, Ethical and Social Issues in the Information Age, 5th Edition, 2013, Springer-Verlag.

Thank You