Fall 2021

PHIL 334-463: Engineering Ethics

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Welcome!

The purpose of this course is to provide students with an introduction to the philosophical examination of the nature of engineering practice and applied technology.

Student Learning Outcomes

By the end of the course, students will be able to:

(1) Identify ethical issues

(2) Describe different ethical decision-making approaches

(3) Analyze engineering ethics cases

(4) Apply different ethical decision-making approaches to engineering ethics cases

(5) Recognize the ethical responsibilities of engineers

(6) Evaluate the broader societal and environmental impacts of engineering

(7) Develop and defend positions about issues in engineering ethics

We will consider questions such as:

- How do the societal functions of engineers and the practical application of technologies relate to basic moral and intellectual values?
- What are the basic moral and intellectual values?
- What moral obligations are implied by the uses of technology?
- What are the ethical duties of engineers in the practice of their careers?

The following introduction pages will provide you with a snapshot of the course. There is no word document or pdf version of a **syllabus.** Rather, these introductory pages serve as your syllabus, and it will provide course content, course information, week by week reading assignments, learning activities, and assessments.

Nota Bene:

This is an asynchronous course. There are differences between in-person class AND online-asynchronous class. The introductory pages will also describe these differences.

Hello and welcome to Engineering Ethics!

This area will help you get acquainted with the design and layout of the course. It will also provide you with some valuable information and guide you through the "how to begin this course" process. Reviewing all of this information should get you off to a good start with our course.

Get started in PHIL 334: Engineering Ethics, by:

- Watching the Course Navigation Video.
- Reviewing the Course Syllabus. If you have any questions post them on the Questions for the Instructor Discussion Board.
- Reviewing the Questions for the Instructor Discussion Board information.
- Review Module One: Introduction to the course

Questions for the Instructor Discussion Board

Throughout the duration of our course, you should post any questions that you have about the course to the Questions for the Instructor Discussion Board. Posting questions here is helpful for everyone in the course. Usually, if one person in the course has a question the facilitator's answer can be helpful for everyone to read.

Your facilitator will check this discussion forum every week. Typically, you will receive a response within 48 hours during the week and by Monday morning for questions posted over the weekend. In order to post a question, click on the link above, and create a new thread. Give your post a title and type your question in the text box. If someone posts a question and you know the answer, by all means, answer.

The Human Element

Please note, this course is designed and facilitated by a human being, who will make mistakes. If you find something in the course that seems incorrect, missing, or is simply confusing please don't hesitate to contact me. Post on the discussion board or email your facilitator privately. We will do our best to eliminate the natural anxiety that can come with learning online.

Welcome to the world of online learning. I'm so happy to have you here and look forward to working with all of you.

This video was created as a general Canvas navigation tutorial: How to access our content, How to navigate Canvas, the Days of the week our assignments are due (Thursdays and Sundays), etc.

Course Goals

Students will:

- Identify the novel elements introduced into ethics (as compared to traditionalist accounts) by factors unique to Engineering Ethics.
- Identify and discuss the ethical constraints on the actions of professionals in fields involving Engineering.
- Research a topic in Engineering Ethics and provide a presentation on an analysis of the topic and the ethical or social issues it raises.
- Analyze case studies within Engineering Ethics to identify stakeholders and the positive and negative impacts on them.
- Correctly apply the principles of an accepted ethical framework to the analysis of case studies.

Learning Outcomes:

By the conclusion of the semester, students will have learned:

(1) Identify ethical issues

(2) Describe different ethical decision-making approaches

(3) Analyze engineering ethics cases

(4) Apply different ethical decision-making approaches to engineering ethics cases

(5) Recognize the ethical responsibilities of engineers

(6) Evaluate the broader societal and environmental impacts of engineering

(7) Develop and defend positions about issues in engineering ethics

Required Texts:

- Ethics in Engineering, 4th, by Mike Martin and Roland Schinzinger ISBN 978-0-07-283115-3
- Cyberethics, Morality and Law in Cyberspace, 6th edition by Richard A. Spinello ISBN 978-1284081398

Assessment and Evaluation

Assessment and Evaluation

Students' engagement in the course will be assessed in three main categories, each weighted according to their centrality in achieving the course objectives stated above:
Discussion Posts & engagement in the online course: Since the success of the course depends on the contributions of all of us in our online classroom, as well as individual learning, students are required to:

1.
    1. Uphold a code of learning and active participation in all Discussion forums
    2. Posts on Discussion forums must be prepared, contributing to overall class discussion and semester-long learning.
    3. Unless otherwise stated in the module for that week, there will be one weekly post due every week by Thursday, 11:59 pm, which consists of 50 points (Exception includes the modules designated for the end-of-term project). **No late submissions will be accepted**.
    4. Unless otherwise stated in the module for that week, every week, you will be required to respond in a respectful manner to your classmates' posts. One (1) reply will be required, worth 30 points. This part of the assignment will be due every week no later than Sunday, 11:59 pm (Exception includes the modules designated for the end-of-term project). **No late submissions will be accepted**.

Quizzes: Unless otherwise stated in the module for that week, every week you will be required to complete a short quiz which will ensure you are completing the reading assignment. 20 points per lesson (Exception includes the modules designated for the end-of-term project). These are due every week no later than Thursday, 11:59 pm. **No late submissions will be accepted**.
Total points per lesson: Unless otherwise stated in the module for that week, the majority of lessons will have 50 points for individual posts, 30 points for replies, and 20 points per quiz. This means you will receive a total of 100 points per lesson. The exceptions include the modules designated for the end-of-term project.
Individual Presentation: Research a theme within engineering ethics or cyberspace ethics and select 2 cases to summarize and analyze through the lens of (a) ethical frameworks, (b) tools for ethical decision making, and (c) code of ethics from professional societies. Modules during the fifth and ninth week of this semester will assist you with this project, worth 250 points.
To summarize, the majority of the lessons will consist of the following points:

- **50 points per individual post**
- **30 points per week (reply post)**

- **20 points per quiz**

Totals:

- **11 quizzes at 20 points each = 220 points**
- **11 forums at 80 points each = 880 points**
- **1 forum at 50 points (lesson 1) = 50 points**
- **2 forums at 100 points (lesson 5 and 9) = 200 points**
- **1 individual presentation = 250 points**

Total Possible Points – 1,600 points

Grading

The following is our grading scale. Note that the grade for the average work is a C+

1440 + points	A	Excellent: Honors level / superior work
1390 points	B+	Very good work
1280 points	B	Good, solid, above-average performance
1230 points	C+	Average level of performance
1120 points	C	Satisfactory, but with some problems
800 points	D	Passing, but unsatisfactory; below average
Less than 800	F	Failure, inferior performance

Related Information:

1. CANVAS: Assignments, course content, links, and resources for group projects are available on Canvas. Students are expected to check regularly the course's Canvas site for class announcements regarding university events related to the course, cancellations, assignment clarifications, and on-line discussions in which you are required to participate.
2. Academic Integrity: All papers and examinations must adhere to University's policies regarding academic integrity (please see the Student Handbook). Any infractions of those policies will be subject to the sanctions listed there (a failing grade for any plagiarized assignments, a formal report of the incident submitted to the Dean, possible suspension from the course based on the Dean's evaluation). Please see me if you have any questions about the academic integrity of any of your work.
3. ADA Notice: Under the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973, all students, with or without disabilities, are entitled to equal access to the programs and activities of a university. If you believe that you have a disabling condition that may interfere with your ability to participate in the activities, course work, or assessment of the object of this course, you may be entitled to accommodations. Please schedule an appointment to speak with someone at the Office

of Disability Support Services in Fenster Hall Room 260, 973 – 596 – 5598 or dss@njit.edu

Schedule of Modules

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Schedule of Topics, Readings, and Assignments (N.B. subject to change at Professor's discretion, please check Canvas always for scheduling details):

Module 1: Welcome: Start Here & Introduction to the course
Module 2: Introduction to Ethical Frameworks
Module 3: Introduction to Engineering Ethics
Module 4: Moral Reasoning and Code of Ethics
Module 5: Tools for Ethical Decision Making
Module 6: Engineers as Moral Agents
Module 7: Commitment to safety
Module 8: Workplace responsibilities and rights
Module 9: Independent Research Assignment: Annotated Bibliography Due
Module 10: Ethical Values and the Digital Frontier
Module 11: Free Speech and Content Control
Module 12: Intellectual Property and ethical issues of property in Cyberspace
Module 13: Regulating internet privacy in Cyberspace
Module 14: Individual Presentations
Module 15: What I learned