Ethics in the Professions: Introduction to Engineering Ethics

PHILOS 1332, Section 15308, Summer 2018

Place: McPherson Lab 1041 **Time:** MWF 11:25–2:35

Instructor: Eric de Araujo **Office:** University Hall 214

Email: dearaujo.3@osu.edu **Office Hours:** MW 10:15am

Texts & Materials

Required Textbooks:

- *Ethics, Technology, and Engineering*, Ibo van de Poel and Lambèr Royakkers (ETE)
- *An Introduction to Moral Philosophy*, Jonathan Wolff (MP)

Readings will come from the textbook and from supplemental material posted in Carmen. Please bring your copy of the textbook and hard copies of any supplemental readings to class.

Course Description

This course is an examination of contemporary issues in engineering ethics in the context of major ethical theories. To examine these issues, we will start by learning some basic philosophical argumentation and briefly examine three major ethical theories. The issues we will look at include the role and ethical responsibility of the professional engineer, the particular norms that govern the profession, and the ethical topics like safety and risk, and the distribution of responsibility. We will also examine a strategy to help individual engineers make moral decisions.

Course Goals & Objectives

By completing this course, students will be able to:

A. Recognize engineering as an ethical activity by

1. identifying moral features of engineering problems and solutions,
2. identifying moral implications of design,
3. identifying moral obligations of engineers, and

4. identifying norms (moral and otherwise) that apply to the engineering profession.

B. Reason about ethical issues by

5. recognizing and evaluating patterns of reasoning,
6. constructing and evaluating moral arguments, and
7. understanding and evaluating some moral theories.

C. Apply moral reasoning to engineering by

8. developing strategies for moral decision making in engineering contexts,
9. practicing moral reasoning by reflecting on historical and fictional engineering cases,
10. evaluating moral decision making with respect to different roles, and
11. practicing moral reasoning in group decision making.

This course meets the *General Education Goal and Expected Learning Outcomes* for "Cultures and Ideas" in the following ways:

D. (*General Education Goal*) "Students [will] evaluate significant cultural phenomena and ideas in order to develop capacities for aesthetic and historical response and judgment; and interpretation and evaluation" by:

understanding and evaluating some ethical theories (7), identifying moral features of engineering problems and solutions (1), identifying moral implications of design (2), and identifying norms (moral and otherwise) that apply to the engineering profession (4).

E. (*General Education Outcome*) "Students analyze and interpret major forms of human thought, culture, and expression" by:

recognizing and evaluating patterns of reasoning (5), constructing and evaluating moral arguments (6), and understanding and evaluating some ethical theories (7).

F. (*General Education Outcome*) "Students evaluate how ideas influence the character of human beliefs, the perception of reality, and the norms which guide human behavior" by:

identifying moral features of engineering problems and solutions (1), identifying moral implications of design (2), identifying moral obligations of engineers (3), identifying norms (moral and otherwise) that apply to the engineering profession (4), and understanding and evaluating some ethical theories (7).

Schedule

Here is the schedule we hope to follow. The first table lists the topics and associated readings. You should read the material and complete the accompanying reading quiz before class. The second table lists when major assignments are due and when exams occur. The schedule is subject to change and I will communicate changes via email or using Carmen.

Schedule of Readings

Topic	Subtopic	Reading	Read By
Arguments & Logic		Chapter 4 from ETE & Chapter 1 from MP	5/9
Ethical Theories	Utilitarianism	Chapters 8 & 9 from MP	5/11
	Kantianism	Chapter 10 & 11 from MP	5/14
	Virtue Ethics	Chapter 12 & 13 from MP	5/16
Ethics of the Profession	Role of the Engineer	Chapter 1 from ETE	5/18
	Codes of Conduct	Chapter 2 from ETE	5/23
Ethical Topics	Safety & Risk	Chapter 8 from ETE	5/25
Making Moral Decisions		Chapter 5 from ETE	5/30
Ethical Topics Cont.	Distribution of Responsibility	Chapter 9 from ETE	6/1

Schedule of Assignments

Date	Major Assignment	Venue	Goals
Throughout the Term	Reading Quizzes	Online	A
	Deep Dives	Online	A, C, D, F
5/11	Pre-Course Reflection	Online	A, D
5/14	Argument Practice	In Class	B, E, F
5/21	Midterm	In Class	B, E
6/1	Post-Course Reflection	Online	A, D
6/4	Final Exam	In Class	A, C, D
	Ethical Cycle Report	Online	C, D

Grading

Argument Practice	***5%***
Reading Quizzes	***10%***
In-Class Activities	***5%***
Deep Dives	***20%***
Deep Dive #1	*5%*
Deep Dive #2	*5%*
Deep Dive #3	*5%*
Deep Dive #4	*5%*

Tests	***30%***
Midterm	*15%*
Final Exam	*15%*
Reflection Papers	***5%***
Pre-Course Reflection	*2.5%*
Post-Course Reflection	*2.5%*
Ethical Cycle Report	***20%***
Participation	***5%***

Course Mechanics

I have planned the course to begin with a primer on logical argumentation and an overview of three ethical theories in philosophy. We will then apply the logical tools and ethical theories to various topics in engineering. Here are the concrete ways I plan to do this:

Argument Practice

Th e beginning of the course will introduce some basics of logical argumentation. There will be in-class activities for you to practice some of these skills as well as a homework assignment.

Discussion

Thinking about ethical issues is part of the broader practice of doing philosophy. Doing philosophy is like having a conversation with a lot of people. By discussing issues in class, you will be doing philosophy. Discussion is an opportunity for you to ask questions about the reading, offer your own views and criticisms, and respond to the views of your peers. My job is to make the material clear to the class and to facilitate a dialogue.

I want everyone to grow more comfortable contributing to our in-class discussions. Trying out your ideas with your peers helps improve them. I will offer several ways for you to participate. These will range from large discussions with the whole class to conversations with a partner. In an effort to give everyone an opportunity to participate, I am open to trying different things so that everyone can make a contribution. Please contact me if there are any concerns about your contributions to the class.

In-Class Participation

In addition to lectures and discussions, there will be in-class activities. These activities serve several purposes. Some will be opportunities for you to practice important skills. Others are meant to spark your own thinking or facilitate discussion. These will generally be graded on a complete/incomplete basis.

Reading Quizzes

In order to best utilize our time together, there will be short quizzes for each of the readings on Carmen. These are designed to assess basic comprehension of the material so you are prepared to discuss the material in-class. These will partially be graded on completion and partially on accuracy.

Deep Dives

Th ere are many topics this course could cover that we won't have time to fully address. Additionally, we might not always have the time to discuss in depth the topics that you find most interesting. This is an opportunity for you express your views on topics that come up throughout the course. For most course topics, I will post 1 or more questions that you can address in short paper. They will be due two class periods from the day they are posted. You will need to complete 4 during the term.

Tests

Th ere will be a midterm and final exam for the course. The midterm will cover the basics of argumentation and the ethical theories we discuss. The final exam will cover the particular ethical topics in engineering we survey in the second half of the course. You might need to apply knowledge from the first half of the course to fully address questions regarding the second half of the course.

Ethical Cycle Report

Some of the issues we address speak to ethical issues that apply to engineering at a level of generality. The Ethical Cycle Report is a chance for you to apply moral reasoning to a case from the perspective of an individual decision maker. The cycle is explained in Chapter 5 and we will work through examples in class. You will apply the Ethical Cycle to a case and construct a report where you present the various steps in the cycle.

Course Reflections

Th ese reflection papers are an opportunity for you to reflect on the ethical dimension of the engineering profession. The initial paper is an opportunity for you to reflect on ethics in engineering before introducing you to the ethical theories and ethical issues in engineering. The last paper is an opportunity for you to reflect on how your thinking about the ethical dimension of engineering has been shaped, if at all, by the course.

Office Hours

Office hours tend to be an underutilized resource (unless something is due soon). You are welcome to come and chat about anything related to the course. Office hours can be a good way to clear up misconceptions and better understand how you are doing in the course. I will make an effort to find a time to meet if you cannot make it to the scheduled times.

Policies

Discussion

One reason thinking about ethics is interesting is because people disagree. If our in-class discussions are good, then you will be disagreeing with each other. However, this does not mean that discussions need to become especially heated or make people personally uncomfortable (though I welcome intellectual discomfort). All participants should respect one another and treat each other as intellectual peers whose views are worthy of consideration. In doing this, we should remember to critique people's views and not people themselves.

If there are participants who threaten the cooperative atmosphere of the class I will limit their participation appropriately (even if that means asking them to leave the class session). Please contact me if something occurs during discussion that I did not address. I want us to wrestle with difficult texts and ideas, but I do not want anyone attacking others personally.

Attendance

Class time is an opportunity to better understand the issues we are talking about, to ask questions, try out your ideas, and learn from your peers. If this is true, then attending class will help you do well in the course. Additionally, it is not possible to participate in the course without attending. Because of this, I will keep track of attendance. Merely showing up to class is not enough to participate, but poor attendance does indicate a lack of participation.

Th ere are at least two days when showing up is *very important*–the days of tests! The only opportunity to make up tests are if your absence is *unavoidable* and *verified*. If you find yourself in this situation, notify me as soon as possible and provide appropriate documentation.

Accommodations

I want everyone to be able to participate in our ethical discussions and utilize this course in their professional development. To that end, I will accommodate students who have a documented disability (including mental health, chronic or temporary medical conditions) and have registered with Student Life Disability Services. Please meet with me privately as soon as possible at the beginning of the term to discuss the accommodations that will be implemented. If you have not already registered, please contact SLDS at 614-292-3307 or slds@osu.edu as soon as possible.

Academic Integrity

As far as I can tell, the opportunities for academic misconduct are during tests and constructing your Ethical Cycle Report. I assume you understand what it means to complete a test without cheating. In writing assignments, a common breach of academic conduct on a paper is plagiarism. is includes copying another's work or failing to appropriately attribute an idea to someone. These issues will be explained further when we discuss the report. However, you are responsible for understanding and adhering to the University's policies on academic misconduct found in the University's Code of Student Conduct. Further, I am obligated to report instances where I suspect academic misconduct to the Committee on Academic Misconduct (COAM). If COAM determines that you have committed academic misconduct, the consequences can be severe. Please contact me if you are unsure about what this means or have any questions.

Here are some relevant resources on the matter:

- The Committee on Academic Misconduct web pages: http://oaa.osu.edu/coam.html
- Eight Cardinal Rules of Academic Integrity: http://www.northwestern.edu/provost/policies/academic-integrity/cardinal-rules.html

Technology

Unless I explicitly say otherwise (for instance, in the case of providing learning accommodations), no technological devices (laptops, tablets, phones, etc.) should be out or in use during class. Unless you inform me of an urgent need to receive a call, phones and other notifying devices should be on silent during class. Failure to adhere to this policy can affect your participation grade.