

PHI 200A-AB: Engineering Ethics
ENR 200A-AB: Engineering Ethics
TR 9:30-10:45 am, DH 204
Fall 2017

Professor: Jennifer Kling, PhD

Office Hours: MTWR 1-3pm; available by appointment (Sacred Heart Hall 312C)

Email: jkling@sienaheights.edu

Phone (emergencies only!): 919-260-2719

Course Description: In this course, we will consider the various ethical issues, problems, and dilemmas likely to arise over the course of an engineering career, and how we ought to think about them. Engineering ethics, as it is sometimes called, stresses analytical reasoning and emphasizes clear thinking regarding the application of professional and theoretical ethical codes and systems to specific cases. We will focus on the National Society of Professional Engineer's (NSPE) ethical code, and will also survey some of the major ethical theories proposed by philosophers, including utilitarianism, deontology, and virtue ethics. Then, we will discuss and determine how to apply these ethical standards appropriately to particular ethical dilemmas that arise in mechanical, chemical, and electrical engineering. In addition, we will also make an effort to learn how to communicate ethical ideas and concepts of a high intellectual order clearly, vigorously, and creatively.

This course is targeted towards high-level undergraduate students; no general or specific philosophical or ethical expertise is assumed or required, but you will need to be able to read carefully, discuss critically, and write insightfully about (what can be) difficult and oblique issues and topics. In this class, you will have to struggle with big concepts that you may not have engaged before, and you will have to work hard to succeed. Along the way you will come to better understand the content and import of engineering ethics, and its implications for our world today. In other words, in this course you are going to learn how to *do* ethical philosophy, which is both difficult and rewarding.

ABET Student Outcomes:

This course supports the following ABET student learning outcomes.

- (f) an understanding of professional and ethical responsibility
- (g) ability to communicate effectively

Course Requirements:

Participation (10%): You will need to both do the readings and come to class in order to be successful in this course. If you don't do the readings, you'll be lost in class; if you don't come to class, you'll be lost in the readings and the assignments. While **excessive** participation is not required, some willingness to engage with both me and your fellow classmates is necessary— without this willingness on your part, we won't be able to have the sort of productive class discussions that will enable you to successfully engage in the course. So, while a lack of participation won't harm your grade very much, participation can significantly *help* your grade.

I appreciate that speaking to a classroom full of your peers can be difficult; so, there are a number of other ways to participate in class. You may speak in class, you may engage in small group work, you may visit my office hours, you may send me emails with questions, comments, and concerns, you may start online discussion threads, you may post relevant outside documents/videos/blogs, etc. to the course website, you may tweet and/or blog and/or journal about issues raised in class, etc. If you're unsure of whether some action counts as participation, please see me, and we'll discuss it.

Blog Posts (5% each): You are required to submit **four** blog posts throughout the semester. Blog posts

are due by the start of the class period on the due date. **Late posts will not be accepted.** They should be roughly 250-350 words in length, and should *either* lay out the ethical issues surrounding a topic clearly and concisely, *or* contain your critical analysis and considered response to a topic. Blog posts may take the form of a standard text post, a 2-3 minute podcast, or a 2-3 minute video. If you wish to submit a blog post in some other form, please see me, and we'll discuss it. ****Collaboration is encouraged but not required.****

Papers (15% each): There are **three** required papers for this course. Each paper should be 2 pages long, and should *critically engage* with some ethical issue brought up in the course texts and class discussions. I will provide a list of topics one week in advance of each paper's due date. If you wish to write on a topic not on the list, please come see me to discuss your proposed topic. If you wish to submit a paper in some other form (podcast, video, tumblr, etc), please see me, and we'll discuss it.

Papers are due by the start of the class period on the due date. For every 24-hour period that a paper is late, I will take 5 points off. That said, I am aware that life happens; if you feel you need an extension, please ask me as soon as possible. The earlier you ask, the more likely I am to give you an extension. Failure to turn in any one of the papers will result in failing the course.

In-class Presentation (15%): Each student must do an in-class presentation, either by themselves or with a partner. Each presentation should be 5-10 minutes long, and should present and critically engage with the main points from the assigned text for the day. We will pick presentation dates a few weeks into the semester, so that students have a feel for the text on which they would like to present. If you wish to present on a topic/issue that is not covered by an assigned text, please see me, and we'll discuss it. Failure to do an in-class presentation will result in failing the course.

Final (10%): There is a required final exam for this course. The exam will consist of a series of short answers as well as (possibly) one longer essay. Failure to take the final exam will result in failing the course.

Grading Scale:

A (90-100): An 'A' denotes exceptional skill and ability. An 'A' student demonstrates an excellent grasp of the material (i.e., the student understands the material enough to explain it succinctly and well), and also displays the ability to engage thoughtfully with both the broad issues and finer points under discussion.

B (80-89): A 'B' denotes solid-to-impressive skill and ability. A 'B' student demonstrates a good grasp of the material (i.e., the student understands the material well enough to explain it with few mistakes), and also displays the ability to engage thoughtfully with most, if not all, of the issues and points under discussion.

C (70-79): A 'C' denotes adequate skill and ability. A 'C' student demonstrates a fair grasp of the material (i.e., the student understands the big picture, but makes some serious errors in presentation), and also displays the ability to engage thoughtfully with at least some of the issues under discussion.

D (60-69): A 'D' denotes inadequate skill and ability. A 'D' student has serious problems with grasping the material, and fails to engage thoughtfully with any of the issues under discussion.

E (0-59): An 'E' denotes catastrophic problems in fulfilling the requirements of the course. An 'E' student neither grasps the material nor engages with it critically at any level.

While hard work is correlated with success, it is not sufficient for success. To get a good grade in this course, you need to not only understand and engage with the material, but also communicate your understanding and engagement to me via your participation, projects, and papers. If you sense that you are heading towards a grade you do not want, please come see me as soon as possible (if you wait until the end of the semester, it will be too late).

Assignments:

All readings, videos, podcasts, etc can be found on this course's Canvas site.

Week 1: Introduction + Why Engineering Ethics

Tuesday, August 29th **Read:** Abbas El-Zein, “As engineers, we must consider the ethical implications of our work,” *The Guardian*, 5 Dec 2013.

Thursday, August 31st **Read:** Langdon Winner, “Engineering Ethics and Political Imagination”

Week 2: Responsibility in Engineering

Tuesday, Sept. 5th **Read:** Chapter 2: Responsibility in Engineering, *Engineering Ethics: Concepts and Cases* (4th edition), Harris, Pritchard, and Rabins.

Thursday, Sept. 7th **Watch:** BBC Documentary, “Race for the World's First Atomic Bomb: A Thousand Days of Fear”

Week 3: Thinking Through the Problem

Tuesday, Sept. 12th **BLOG POST #1 DUE** and **Read:** Chapter 3: Framing the Problem, *Engineering Ethics: Concepts and Cases* (4th edition), Harris, Pritchard, and Rabins.

Thursday, Sept. 14th **Listen:** “Richard Bradley on Understanding Decisions,” Philosophy Bites Podcast

Week 4: Utilitarianism

Tuesday, Sept. 19th **Read:** Mill, *Utilitarianism*, selections

Thursday, Sept. 21st **PAPER #1 DUE** and **Read:** Peter Singer, excerpt from “Famine, Affluence, and Morality”

Week 5: Utilitarianism, continued

Tuesday, Sept. 26th NO CLASS: COMMON DIALOGUE DAY

Thursday, Sept. 28th **Watch:** “Utilitarianism Part 2” <http://www.wi-phi.com/video/utilitarianism-part-2> and **Read:** “The Ford Pinto and Balancing Values” case study

Week 6: Deontology

Tuesday, Oct. 3rd **Read:** David Velleman, “A Brief Introduction to Kantian Ethics,” selections

Thursday, Oct 5th **Write:** 3 Questions about Ethics in Engineering
Note: Instructor Out, TBA Guest to Skype in

Week 7: Deontology, continued

Tuesday, Oct 10th **BLOG POST #2 DUE** and **Listen:** “John Tasioulas on Human Rights,”
Philosophy Bites Podcast

Thursday, Oct 12th **Watch:** *United States of Secrets*, PBS Frontline Documentary

Week 8: Virtue Ethics

Tuesday, Oct 17th **Listen:** “Roger Crisp on What is Virtue Ethics,” Practical Ethics Bites
Podcast

Thursday, Oct 19th **PAPER #2 DUE** and **Read:** Martha Nussbaum, “Non-relative Virtues: An
Aristotelian Approach,” selections

Week 9: Virtue Ethics, continued

Tuesday, Oct 24th **Read:** “Technological Instrumentalism” case study

Thursday, Oct 26th **Listen:** “Tom Douglas on Should we allow genetic engineering on
embryos?” Practical Ethics Bites Podcast

Week 10: Solving the Problem

Tuesday, Oct 31st **Read:** Chapter 4: Resolving Problems, *Engineering Ethics: Concepts and Cases*
(4th edition), Harris, Pritchard, and Rabins.

Thursday, Nov 2nd **Read:** “The Digital Divide” case study **and** “Algorithms, bias, and
“corporate activism” case study

Week 11: Ethics in Design

Tuesday, Nov 7th **BLOG POST #3 DUE** and **Read:** Chapter 5.8-5.10: How Shall We
Design, *Engineering Ethics: Concepts and Cases*
(4th edition), Harris, Pritchard, and Rabins.

Thursday, Nov 9th **Read:** Clive Thompson, “No Parking Here,” *Mother Jones*, January/February
2016.

Week 12: Risk and Liability

Tuesday, Nov 14th **Read:** Chapter 7: Risk and Liability in Engineering, *Engineering Ethics:
Concepts and Cases* (4th edition), Harris, Pritchard, and Rabins.

Thursday, Nov 16th **PAPER #3 DUE** and **Read:** David Danks and Joseph H. Danks, “Beyond
Machines: Humans in Cyberoperations,
Espionage, and Conflict”

Week 13: Working within Institutions

Tuesday, Nov 21st **Read:** Chapter 8: Engineers in Organizations, *Engineering Ethics: Concepts and*

Cases (4th edition), Harris, Pritchard, and Rabins.

Thursday, Nov 23rd NO CLASS: THANKSGIVING BREAK

Week 14: Going Beyond the Law

Tuesday, Nov 28th **Read:** Chapter 9.6-9.8: Engineers and the Environment, *Engineering Ethics: Concepts and Cases* (4th edition), Harris, Pritchard, and Rabins.

Thursday, Nov 30th **Watch:** *Cat Laine: Engineering a better life for all*, TED Talk

Week 15: Choosing a Career

Tuesday, Dec 5th **BLOG POST #4 DUE** and **Listen:** “Susan Wolf on Meaning in Life,” Philosophy Bites Podcast

Thursday, Dec. 7th **Review/Catch Up**

Week 16: Final Exam

Thursday, Dec 14th **FINAL EXAM:** 8:30-10:30am, DH 204

Code of Student Conduct:

All students at Siena Heights University are responsible for knowing and adhering to the academic integrity policy of this institution. For more information, please see the [Code of Student Conduct](#). Please obey the spirit as well as the law of SHU's Code of Student Conduct. If you think that something is in violation of the Code, it probably is, so check before doing it. Please remember that unintentional plagiarism is still plagiarism, and that **you must cite all of your sources** for papers!

Please note: every assignment turned in for this class must be your own original work, produced specifically *for this class*. You may not turn in an assignment written for a previous and/or different class. To do so would constitute (self) plagiarism, and will be treated as such.

The Writing Center:

The Writing Center at Siena Heights University is a free resource available to all CAS students. Students are encouraged to visit the writing center for writing feedback at any stage in the writing process. For information regarding their tutors, hours, location, or to utilize their online links and resources, please visit writingcenter.sienaheights.edu.

Diversity and Disability Statement:

Our institution values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please notify the instructor as soon as possible. Students with disabilities are also welcome to contact the Office of Accessibility (517) 264-7683 or Laura Lyall (coordinator) at lyall@sienaheights.edu to discuss a range of options to removing barriers in the course, including accommodations. This process is initiated and driven by the student. It is to your advantage to begin the process in a timely manner, since accommodations are not retroactive. Grades earned before verification of a disability by the Office of Accessibility will not be changed.

Academic Engagement Policy:

In response to federal regulations governing financial aid, faculty will report students who are absent from class for one week without explanation. These students will be contacted to determine their current status. Students who are disengaged from a class for two weeks will be administratively withdrawn from that class and given a withdrawal grade equivalent to an E in grade point calculations. In order to avoid an administrative withdrawal, students can initiate a withdrawal themselves before the deadline (November 5) and avoid negative consequences to their grade points.

Sex- and Gender-based Violence and Harassment:

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted for **any** reason, you can find the appropriate resources here:

- The SHU Counseling Center, directed by Sandy Morley, is open M-F from 8 am to 5 pm or by appointment. Sandy Morley is a confidential resource. You can reach her at 517-264-7193 or smorley@sienaheights.edu, or stop by Ledwidge Hall 195-197. Counseling services are offered at no charge to University students.
- The SHU Public Safety Department can be reached at 517-264-7800 or by dialing 0 on campus. They are available 24 hours a day, 365 days a year, and they offer 24-hour escort service to any location on campus. Cindy Birdwell is the Chief Public Safety Officer and she is also SHU's Title IX Coordinator. She can be reached at 517-264-7194 or cbirdwel@sienaheights.edu and her office is in Ledwidge 179.
- Campus Ministry is another valuable resource for students, no matter their faith tradition. Father John Grace is a confidential resource on campus. He can be reached at 517-264-7198 or jgrace@sienaheights.edu, and his office is located in the Campus Ministry Lounge in Ledwidge.

Syllabus Changes:

I reserve the right to make changes to this syllabus as appropriate. The odds that I'll do so during the semester are small, but if I do, I will inform you as soon as possible.