

Philosophy 3225-103 ENGINEERING ETHICS

Professor Patrick Gamez
Tues/Thurs: 2:00 - 3:15 pm
Room: Butler-Carlton 00317

Office: 218 Castleman
Office Hours: Wednesday 1-5 pm

Aims of the Course

Engineers occupy a unique professional position, as technical problem-solvers responding to a wide variety of social concerns. Moreover, as technology advances, ever more phenomena come to be seen as potential opportunities for the intervention of engineers. With such a position come unique responsibilities, some of which are reflected in professional codes. In this class, we will look not only at professional responsibilities and obligations, but also at broader *ethical* responsibilities, and broader ethical issues, in engineering training, practice, and policy. These include the ethics of technological design, of managing the risk of unintended consequences, how engineering can contribute to a sustainable society, and issues arising from the spread of information and communication technologies.

By the end of the course, you should have the intellectual tools to analyze and response to ethical problems concerning technology and design as they arise in your personal and professional lives. This includes have an array of ethical concepts available to you, and skill at ethical reasoning, as well as an understanding of the history and promise of engineering as a profession. Perhaps most importantly, you will understand why ethical thinking is a valuable component of engineering practice.

Texts

Required texts

Christopher Bennett, *What is This Thing Called Ethics?*
Charles Harris et al, *Engineering Ethics: Concepts and Cases*
Samuel Florman, *The Existential Pleasures of Engineering*
Mike Martin and Roland Schinzinger, *Introduction to Engineering Ethics*

Other texts will be made available electronically

Grading

Participation:	20%
Reading Responses:	20% (5 each)
Papers:	60% (15% each)

Participation

We will attempt to *do* philosophy as it is best done, that is, as a dialogue. Ideas are often born awkwardly, but take shape and, indeed, take on a life of their own through discussion. Meaningful discussion can even be an arena where, in staking out a position, one puts oneself as stake, and thus opens oneself to potential transformation. Therefore, please do not be afraid to speak up in class. Though I may not often solicit questions from you, you are highly encouraged to voice your concerns and confusions, as they are most likely shared by your classmates. The more thoughtful the questions, comments, or discussion points you share, the more likely you will receive the full participation grade. I hope that the material is engaging enough that you will be filled with a burning need to discuss it but, if not, I hope that the prospect of a better grade will provide sufficient motivation.

Participation will also include short “5 minute papers” for each class meeting. At the end of each class, we will take 5 minutes and you will write a short explanation of three things:

- i. The part of class you found most interesting.
- ii. Why you found it interesting.
- iii. Something you didn’t understand and would like to have explained or discussed further.

Reading Responses

Beginning in week 3, every Thursday meeting we will discuss a chapter from Florman’s *The Existential Pleasures of Engineering*. You will be required to turn in a reading response for **FOUR** chapters of your choosing. These will be due at midnight the day of the relevant meeting.

Papers

Information about papers and rubrics will be provided closer to their assignment dates.

Late Assignments

I do not accept late assignments. There are very few time-sensitive constraints in this class, and there is a lot of room to work with your schedule. You are an adult and responsible for managing your time.

Plagiarism, Cheating, and Other Violations of Academic Integrity

Part of the purpose of studying philosophy is to learn to be responsible. That I take this seriously, and grant you the freedom that genuine responsibility requires, is apparent in my evaluation and attendance policies. This also means that you will be held fully responsible for any violations of academic integrity. If you are at all unfamiliar with the code of honour to which you have agreed to hold yourself, I *highly* recommend that you spend some time with it. It can be found online [here](#), along with other resources for fostering your academic integrity. Should you break this code, even after this warning, you shall be subject to harsh penalties.

Cheating will not only jeopardize your academic future. You will have tried to manipulate others, through dishonesty, to your own advantage, which is as glaring a sign of lacking self-esteem as it is of total disrespect for others. Don't do it.

Title IX

Missouri University of Science and Technology is committed to the safety and well being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/ domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T's Title IX Coordinator is Chief Diversity Officer Neil Outar. Contact him (naoutar@mst.edu; (573) 341-6038; 203 Centennial Hall) to report Title IX violations. To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.

Tentative Schedule

Notes on abbreviations:

ETHICS	Christopher Bennett, <i>What is This Thing Called Ethics?</i>
ENG	Charles Harris et al, <i>Engineering Ethics: Concepts and Cases</i>
EXP	Samuel Florman, <i>The Existential Pleasures of Engineering</i>
INTRO	Mike Martin and Roland Schinzinger, <i>Introduction to Engineering Ethics</i>

Any other readings will be hyperlinked in this syllabus or made available through Canvas

Week 1: Aug. 20/22

Engineering Codes and Professional Ethics

Tues: Introduction, Discussion Discussion

Thurs: Moral Machines and Self-Driving Cars:

Assignment: Moral Machine simulator moralmachine.mit.edu

Readings:

- "Should Self-Driving Cars Have Ethics?"
- "Self-driving car dilemmas reveal that moral choices are not universal"
- "A Study on Driverless-Car Ethics Offers a Troubling Look Into Our Values"

Week 2: Aug. 27/29

An Introduction to Ethical Thought

Tues: *ETHICS*, Introduction and Ch. 1 (pp. xi-18)

Thurs: *ETHICS* Ch. 2 (19-36)

First short paper assigned August 29**Week 3: Sept. 3/5**

Ethical Thought and the Engineering Profession

Tues: *ENG*, Ch. 1 (pp. 1-17)

Thurs: *EXP*, Introduction and Ch. 1

First short paper due September 5**Week 4: Sept. 10/12**

Moral Theories 1: Utilitarianism

Tues: *ETHICS*, Ch. 4

Thurs: *EXP*, Ch. 2

Week 5: Sept. 17/19

Moral Theories 2: Deontology

Tues: *ETHICS*, Ch. 5

Thurs: *EXP*, Ch. Ch. 3

Week 6: Sept. 24/26

Moral Theories 3: Virtue Ethics

Tues: *ETHICS*, Ch. 6

Thurs: *EXP*, Ch. 4

Second short paper assigned Sept. 26**Week 7: Oct. 1/3**

Responsibility

Tues: *ENG*, Ch. 3

Thurs: *EXP*, Ch. 5

Second short paper due Oct. 3**Week 8: Oct 8/10**

Is Engineering a Social Experiment?

Tues: *INTRO*, Ch. 4

Thurs: Class canceled - no meeting

Week 9: Oct. 15/17

Safety and Risk

Tues: *INTRO*, Ch. 5

Thurs: Class canceled - no meeting

Third paper assigned Oct. 17

Week 10: Oct. 22/24

Ethics in the Workplace

Tues: *INTRO*, Ch. 6

Thurs: *EXP*, Ch. 6

Third short paper due Oct. 24

Week 11: Oct. 29/31

Trust, Truth, and Whistleblowing

Tues: *INTRO*, Ch. 7

Thurs: *EXP*, Ch. 7

Week 12: Nov. 5/7

Ethics and Computing

Tues: *INTRO*, Ch. 8

Thurs: Humanities and Technology Conference (Nov. 7-9)

Final paper assigned

Week 13: Nov. 12/14

Engineering Ethics and the Environment

Tues: *INTRO*, Ch. 9

Thurs: *EXP*, Ch. 8

Week 14: Nov. 19/21

Risk, Error, and Computing

Tues: *INTRO*, Ch. 10

Thurs: *EXP*, Ch. 9

Final paper due

THANKSGIVING BREAK NOV. 24-28

Week 15: Dec. 3/5

Tues: *EXP*, Ch. 10

Thurs: *EXP*, Ch. 11