Engineering Ethics
Drexel University
Fall 2021

Course Information:

PHIL 315—Engineering Ethics – Section 130 - 3 undergraduate credits.

Course Description:

Engineering Ethics entails critical deliberation on professional moral issues that challenge traditional moral philosophies and values. Students will study moral problems pertaining to computer technologies; students will also learn to provide ethical analyses of current moral concerns aimed at regulating engineering and relevant corporate policies. The objective of the course is to enhance the student's professional autonomy. It is not to "make" moral professionals, nor is it to inculcate morals into the student.

Engineering ethics is a course in applied ethical philosophy. While applied ethics attempts to inquire from the realm of practice, it also addresses meta-ethical concerns. As a class we will focus and deliberate on such concerns by explicating them from the readings. Moreover, because engineering is ubiquitous public consciousness, it is essential for engineering professionals to deliberate over whether legislative policies and traditional ethical theories are adequate for understanding current issues in engineering. Given the educational background and the proximity of engineering professionals to such social and political issues, professionals obtain greater social responsibilities regarding these civic issues.

Topics that we will be covering in the class will be ethical frameworks, professionalism, professional values and codes of ethics, problem resolution, social impacts of engineering, environmental and international issues in engineering.

While we will be addressing each topic in itself, you will be expected to see how they are interrelated. Requirements for Engineering Ethics include reading, in-class participation, satisfactory performance on examinations, a thesis paper, Blackboard discussions, and homework assignments and quizzes.

Prerequisites: None.
Instructor: Prof. Magyar
Email: ethics@drexel.edu
Office Hours: After class

Required Course Texts:

1) **Charles E. Harris, Jr.; Michael S. Pritchard; Michael J. Rabins; Ray W. James, P.E.; Elaine E. Englehardt. *Engineering Ethics: Concepts and Cases* (6th edition).**
2) **Online materials to be available on blackboard.**

Course Schedule: All reading assignments are to be read before the class session for which the reading is assigned. Reading assignments refer to sections in the course text; make sure to finish each chapter by reading the summary.

9/21: Orientation & Introduction to Engineering Ethics.

9/28: Aristotle's *Nicomachean Ethics* Books 1 and 2 [PDF on Blackboard].

10/5: *Engineering Ethics* Chapter 1.

10/12: *Engineering Ethics* Chapters 2 and 3.

10/19: *Engineering Ethics* Chapter 4. **Quiz #1 online**.

10/26: *Engineering Ethics* Chapter 5. **Midterm**.

11/2: *Engineering Ethics* Chapter 6. Thesis Paper Proposal Due.

11/9: *Engineering Ethics* Chapter 7.

11/16: *Engineering Ethics* Chapter 8. **Thesis Paper Due**

11/23: *Engineering Ethics* Chapter 9 and 10.

11/30: Review for Final Exam

Course Objectives: To enhance the student's professional autonomy.

Upon completion of this course, students:

- will appreciate the value of applied philosophy;
- will understand the main ethical issues of controversy among engineering professionals;
- will be able to form professional moral judgment on the engineering ethics issues and cases studied;
- will know the meaning of key moral philosophy principles and concepts;
- will be able to relate the practical relevance of moral values and beliefs to current engineering ethics issues;
- will have developed a better comprehension of ethical issues facing technology professionals;
- will have acquired the intellectual virtue of critical examination of moral issues within moral frameworks; and
- will have enhanced the ability to develop a coherent and cogent approach to resolving moral issues in engineering.

Instructional Approach:

Rather than authoritatively describing the facts about engineering ethics, I will be engaging you in thinking on the subjects and issues in the readings. Interaction will be brought about via the Socratic method. The necessary conditions for participating in the class are to take an attitude of respectful open-mindedness, to think critically, and to express your thinking by conversing in class. While the subject matter of engineering ethics is somewhat difficult, speaking will encourage you to think more deeply and sincerely about the material.

Assessment and Grading Policy:

The course grade will be determined by assigning the following percentages to each of the following categories:

20% Final
20% Midterm
20% Thesis Paper
15% Home-works and Quizzes
15% Discussions
10% Participation

The University grading system of A+, A, A-, B+, B, B-, etc. will be used.

Exams: There will be two closed-book examinations: the midterm and the final. These examinations will consist of multiple choice, true/false, short answer, and essay questions. Prior to the tests, more details will be discussed.

Thesis Paper: The term paper for this course will be a substantial inquiry into a topic of your choice. The paper is to be an argumentative essay on a controversial issue in engineering ethics. The essay must include a bibliography that is to contain at least three reference sources (other than the readings in the course text). Though no rewrites will be accepted, you may consult with me on rough drafts. Your term paper must be an argumentative thesis paper wherein you present, and cogently argue for your position on a particular engineering ethical issue. Argumentative thesis papers are from 5-7 pages in length wherein the paper is double-spaced, with one-inch margins, and uses a standard font of 12-point size. Note well that late papers will lose ten points for late submission of the assignment**.** Extension of due date for the thesis paper must be given a week prior to the due date – as long as an adequate reason is provided. Incompletes for the course will not be given unless there is a prior agreement with the professor prior to Week 10.

Quizzes: Quizzes will be given at the start of class sessions or online. These are closed book short answer quizzes taken at the beginning of the sessions to diagnose basic reading comprehension.

Home-works: Home-works will be assigned on Blackboard and will be submitted in digital format through Blackboard. Late home-works will only be accepted with an excused absence.

Discussions: We will have discussions periodically on blackboard and announcements will be made when this is the case as we will not have online discussions every week. These discussions are graded and count as part of your grade as the discussions constitute 20% of the total grade.

Americans with Disability Act:
Students with documented disabilities who need course accommodations, have emergency medical information or require special arrangements for building evacuation should contact the instructor within the first two weeks of class.

Verification of any special arrangements needs to be made through the
Office of Disability Services**,** Room 215 Creese Student Center, 215-895-2506. Further information on this can also be obtained at https://drexel.edu/oed/disabilityResources/overview/.

Academic Honesty Policy:
Drexel University is committed to a learning environment that embraces academic honesty. In order to protect members of our community from results of dishonest conduct, the University has adopted policies to deal with cases of academic dishonesty. Please read, understand, and follow the "Academic Honesty Policy" as written in the Official Student Handbook. **Academic honesty will be upheld in accordance with Drexel University's policy.**

Student's Responsibilities:
If the student requests an incomplete (I) or no-credit (NC) grade, it is the student's responsibility to make sure she/he meets the University criteria and deadlines for requesting these grades. If the student stops attending the class, she/he will not be automatically dropped from the course and she/he will receive a grade according to her/his overall performance. It is the student's responsibility to make sure that she/he is properly enrolled in or withdrawn from the course.

Course Drop/Withdrawal Policy:
Once a student is registered, it is his/her responsibility to attend the course, drop the course, or withdraw from the course. Dropping and withdrawing are distinct actions that impact your course enrollment status. In either case, a form, with signature, is required. There are billing consequences and academic record impacts during this process; therefore, the student must attend to the proper procedure when dropping or withdrawing from a course. Please refer to the enroll/drop/withdraw policies. (N.B. Accelerated courses are on a compressed timeframe.)

Incomplete: Drexel University's policy to receive an incomplete is that the student must have completed 70% of the graded course work and sign an incomplete contract.

Financial Obligations:
Students who do not satisfy financial obligations to Drexel University cannot be entitled to a grade by the instructor or the University.

Note well: The instructor reserves the right to make changes to this syllabus if circumstances

warrant such change. All changes will be provided to students by Drexel University email.