

Engineering Ethics

THE BASICS

Course Instructor

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Web Site

We will be using Canvas to organize the course. The schedule, including regular office hours, will be posted to the site, which you will also use to find class documents, access additional readings and resources, and submit assignments.

Resources

There is one required text for the course, available through the Georgia Tech Bookstore: Harris, et al., *Engineering Ethics: Concepts and Cases*, Sixth Edition (paperback: ISBN 978-1-337-55450-3). There are also electronic versions of the book available but, whatever you do, be sure you get the Sixth Edition!

THE COURSE

Overview

Engineering is a profession, but what exactly does that mean? What is it that engineers are supposed to profess?

On one account, to be a professional is to have an exclusive claim on authoritative judgment in some domain, which brings with it a certain social standing and a higher degree of autonomy than is generally possible for those who merely have jobs. That acknowledgment of authority is conditional, however: for the public to accept and to trust such an exclusive claim of expertise, professionals must strive to be *worthy* of trust.

In short, to become a professional is to make a commitment to practice well and responsibly; it is to be accountable to the public.

In this course, we will examine the ethical commitments at the heart of engineering through attentive reading, lecture, active discussion, and writing.

The Goal

The overall goal of any ethics course worth its salt is to foster the development of mature and adept moral practice, the ability to respond well to complex problem situations as they arise.

The more modest goal for this course is to make a few changes in how you perceive and think about the work of an engineer and about the responsibilities you take on when you become a professional.

For our purposes, these goals should be enough for us to go on. For administrative purposes, though, the syllabus must include some more determinate “outcomes” which align with our aims.

General Education:

Core IMPACTS: Humanities

This course should direct students toward a broad *Orienting Question*:

- How do I interpret the human experience through creative, linguistic, and philosophical works?

Completion of this course should enable students to meet the following *Learning Outcome*:

- Students will effectively analyze and interpret the meaning, cultural significance, and ethical implications of literary/philosophical texts or of works in the visual/performing arts.

Course content, activities and exercises in this course should help student develop the following *Career-Ready Competencies*:

- Ethical Reasoning
- Informational Literacy
- Intercultural Competence

Ethics Requirement

Many of you are taking this course to fulfill the Ethics Requirement of your degree program. You may get more out of your experience with the course if you know the background of that requirement.

Degree programs in engineering are evaluated and accredited by a non-profit organization known as ABET, the Accreditation Board for Engineering and Technology. In the current version of the criteria for accreditation, Criterion 3.3 specifies that students should come away from a degree program in engineering with “an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.”

In April 2023, The Academic Faculty of the Institute specified outcomes for courses that fulfill the Ethics Requirement. Students should come away with:

- An ability to recognize ethical and professional responsibilities in real-world contexts.
- An ability to assess actions or decisions based on established ethical principles and theories, or through deliberative processes.
- An ability to consider the implications of actions, both broadly (e.g., global, economic, environmental, or societal) and for individuals.

This course is designed to foster the kind of moral imagination that is a prerequisite for these three “outcomes.”

The Work

Reading for Understanding

For most class sessions, there will be a reading assignment to be completed before we meet. Perhaps the most important work you do for this course will consist in sitting alone, with no distractions, giving your full attention to reading.

As a practical matter, read with some means at hand both to mark key points in the text and to jot down notes for yourself. It’s a good idea to write down one or more prompts for class discussion: something you found especially puzzling or provocative, a question that arose for you while you read, or a connection between the text and something important to you in the wider world.

Discussion

This course is official designated as “lecture,” but don’t imagine that means you may be entirely passive. Dr. Kirkman will lecture, of course, at least some of the time, but the hope is that it will be *interactive* lecture, with opportunities for questions and answers, small-group discussion, brief videos, and even short writing assignments (see below). You’ll learn more – and maybe even enjoy yourself, a little – if you participate actively in the work of the class.

Class meetings on Fridays will generally be conducted as workshop sessions, with intensive review and discussion aimed at supporting the completion of the Exercise assignment due later that day.

Written Assignment: Engagement

An Engagement assignment is a *very* short piece of writing to be completed *and submitted* during a lecture session, based on a prompt provided by the instructor. These will not be announced in advance, though you can anticipate that there will be at least one per week.

These may range from one sentence to one short paragraph; each will concern something that arises during that lecture session.

Each Engagement assignment is to be graded 1 or 0: it either meets expectations or it does not. The expectation is that you are present and engaged in the work of that class session – hence the name – and that you respond directly to the prompt.

Written Assignment: Exercise

An exercise is a somewhat longer writing assignment – a few short paragraphs – in which you will practice using the tools and concepts introduced in lecture and discussion.

An Exercise will be due by 5:00pm most Fridays during the term, to be submitted as text entry or as an uploaded file to the assignment posted on Canvas.

While the workshop sessions on Fridays are designed to support the completion of this assignment, the work you hand in should be written in your own words, based on your own understanding and judgment. See also the Policy on the Use of LLMs/Generative AI, below.

Exercises will be assessed on the three-point scale specified under the Assessment Policy, below. To meet expectations, simply respond directly and adequately to the prompt with a few well-formed paragraphs.

As for how to *exceed* expectations, again see the policy on Assessment below.

ASSESSMENT

Exercises will be assessed on a 3-point scale, built around the *expectations* of each assignment as specified above: 3 = exceeds expectations; 2 = meets expectations; 1 = does not meet expectations; 0 = not submitted.

To meet expectations, accomplish the basic work of the assignment, demonstrating a solid understanding of the matter at hand, making the necessary distinctions and/or connections, and no more.

To exceed expectations, do more than just put in effort: take a risk; reach for some new connection among ideas; try an unusual angle, a shift in perspective; or, really, just do anything that demonstrates full engagement with the process of inquiry aimed at understanding.

The final grade will be determined by an accumulation of points, up to a maximum of 23:

- 10 Engagement Assignments, dropping the lowest two for a total of 8 points;
- 5 Exercises, for a total of 15 points.

Final grades will then be determined by the following scale:

A = 20-23

B = 15-19

C = 10-14

D = 5-9

Please note that the gradebook on Canvas will be of limited use to us: while it may provide a record of how many points you have earned on each assignment, it will attempt to calculate your final grade as a weighted average. Ignore that.

BASIC EXPECTATIONS

Policy on Timeliness

The deadlines for all written assignments are firm. Assignments submitted after the deadline may be accepted if you have some credible, legitimate reason for the delay. For best results, let the instructor or your teaching assistant know ahead of time if something is happening that might cause you to miss a deadline.

Policy on Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations of the Honor Code.

Take this seriously. All suspected instances of academic dishonesty will be dealt with immediately, according to Institute procedures.

Policy on the Use of LLMs/Generative AI

Do not use an LLM (e.g., ChatGPT) to complete the work of the course. To do so would be contrary to the goal and the work of the course specified above as well as a direct violation of the Policy on Academic Integrity.

In the wider world there may be some contexts in which limited use of an LLM could be acceptable, if only provisionally and never for the production of finished written work. Even in the best case, though,

an LLM should be treated as an unreliable and slow-witted research assistant, one which must be given careful and precise instructions, and one whose work must always be checked against the informed judgment of an actual human being.

In any case, this course is *not* one of the contexts in which use of an LLM is acceptable.

If the machine doesn't simply hallucinate something, it will engage in a process of "distributed plagiarism" by skimming other people's work and generating a string of words with a high probability of being minimally coherent to a human user. Hence the violation of the Policy on Academic Integrity.

But consider the goal and the work of this course, which is to prepare *you* for *your* responsibilities as a professional and, really, as an adult human being. As a professional, your stock-in-trade will be your informed, considered judgment.

If you were to outsource your judgment to a machine, what would *you* then have to offer to anyone?

You would make yourself obsolete.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Ivan Allen College Statement on Inclusiveness

The Ivan Allen College of Liberal Arts supports the Georgia Institute of Technology's commitment to creating a campus free of discrimination on the basis of race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, cultural background, political outlook or veteran status. We further affirm the importance of cultivating an intellectual climate that allows us to better understand the similarities and differences of those who constitute the Georgia Tech community, as well as the necessity of working against inequalities that may also manifest here as they do in the broader society.