PHL 334
Engineering Ethics and Technological Practice: Philosophical Perspectives on Engineering
New Jersey Institute of Technology

Fall 9/3-12/11/24

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Office Hours: Monday & Friday 10:00 AM- 12:00 PM EST

Prerequisites/Co-requisites: HUM 102 with a grade of C or higher, and one History and Humanities GER 200 level course with a C or higher.

Course Description: This course presents a philosophical examination of the nature of engineering practice and applied technology. We will consider such questions as: How do the societal functions of engineers and the practical application of technologies relate to fundamental moral and intellectual values? What moral obligations are implied by the uses and creation of technology? What are the ethical duties of engineers in the practice of their careers?

Student Learning Outcomes (SLOs)

By the end of the course, students will be able to:

1. Identify ethical issues

2. Describe different ethical decision-making approaches

3. Analyze engineering ethics cases

4. Apply different ethical decision-making approaches to engineering ethics cases

5. Recognize the ethical responsibilities of engineers

6. Evaluate the broader societal and environmental impacts of engineering

7. Develop and defend positions about issues in engineering ethics

Required Text: Harris, C. E., et al. (2019). *Engineering Ethics: Concepts and Cases,* 6th ed. Cengage. Additional course materials are in each module.

Teaching/Learning Strategies	Evaluation Methods	Percentage of Final Grade
Formal Discussion Boards **(SLOs 1, 2, 3, 4, 5, 6, 7)** Some weeks there will be a graded discussion. Each discussion requires one (1) initial response and two (2) substantive peer responses. The due date listed is when your initial post is due, generally by Friday. All initial posts should cite appropriate resources, whether course materials or outside sources using APA citations, 7th edition. Additional directions and guidelines are on BrightSpace.	Writing responses to prompts, the instructor, and peers.	30%

Two response posts to your peers or instructor are due Sunday of each module week by 11:59 PM. Discussion posts will not be accepted past each module end date which typically occurs on Sunday 11:59 PM each week. The late penalty will be assessed according to the due date of the initial post. Additional directions and guidelines are on Canvas.		
Reflective Discussion Boards **(SLOs 1-7)** These will be discussions in the form of journal entries including an initial post, and then one follow up post to another person. These entries do not require formal APA citations or references. More details are on Canvas.	Writing responses to peers, engaging in critical reflection and sharing.	20%
Quizzes/Exams **(SLOs 1, 5, 6)** At the end of some weeks, there is a quiz/exam that will cover the previous material. This assesses your completion and comprehension of the module materials and reading requirements. More details are on Canvas.	Multiple-choice questions, true-false, select all that apply.	20%
Assignments **(SLOs 1, 2, 3, 4, 5, 7)** These activities are interactive and help you engage with ideas and experiences that bring about questions, comparisons, insights, criticisms, speculations, and tentative conclusions. The specific requirements, along with a grading rubric for each assignment, are located online.	Scaffolding writing assignment leading to a final essay; thought experiments, analyses.	30%
Readings/Audio **Visual Components**	-	-
	Total	100%

Regular and Substantive Interaction: As your instructor in an online course, I would like to make you aware of the times I will be actively working in the course every week:

- On Mondays or Wednesdays from 9:00-11:00 am, I will grade and provide feedback on your work.
- On Tuesdays from 9:00 to 10:30 a.m., I will post an announcement providing general feedback about the assignments from the prior module, including trends, common misconceptions, and points of clarification.
- On Thursdays from 9:00 to 10:30 a.m., I will be active on the discussion boards, reading and responding to posts.

Topical Outline of Modules: Each module begins on Monday and ends Sunday. The following week's material will be available by Thursday, so feel free to work ahead. All due dates are for Eastern Standard Time (EST) zone.

Instructor Feedback & Response Time: I will typically reply to your questions, concerns, and comments within 24-48 hours. Assignments will typically be graded within one week from the due date.

Instructor-Learner Communication:
Students have every opportunity to exchange ideas and express concerns with me. As such, communication is as follows:

Email/Canvas Messages: This is the primary method I will communicate with you and with which you should communicate with me. My email is Amber.e.george@njit.edu. You should check your email account daily as important course information might await you. During weekdays, I will do my best to respond to student messages within 24 hours. Over weekends, my goal is to respond to emails within 48 hours.

Activity Feedback: I will always provide feedback on all graded assignments. If, for some reason, your work misses the mark, I will leave you feedback identifying what you can do to improve. I aim to assess your submissions within a week of the assignments' due dates.

Office Hours: Monday and Friday mornings 10AM-12PM. I can also be available by appointment outside of these hours. Please note that I am in New York and, therefore, on EST.

Announcements: I will use the Canvas announcements area to broadcast course-related information to everyone in the class. Please check the Announcements frequently.

Reading/Assignment Schedule (Meeting-by-Meeting Outline):

Module 1: Introduction to the Subject

To Read/Review:	To Do:	Due Dates
The "Start Here" module	Module 1 Reflective Discussion - 1 Initial Post	September 7, 2024
Chapter 1 "Engineers: Professionals for the Human Good"	Module 1 Reflective Discussion - 1 Response Post	Sept 8, 2024
Module Content	Module 1 Quiz	Sept 8, 2024

Module 2: Ethical Approaches to Engineering

To Read/Review:	To Do:	Due Dates
Chapter 2 "A Practical Ethics Toolkit"	Module 2 Formal Discussion – 1 Initial Post	Sept 13, 2024
Module Content	Module 2 Formal Discussion - 2 Response Posts	Sept 15, 2024

Module 3: Code of Ethics

To Read/Review:	To Do:	Due Dates
Appendix (pp. 269-174)	Module 3 Assignment	Sept 22, 2024
Module Content		

Module 4: Responsibility, Accountability, and its Challenges in Engineering

To Read/Review:	To Do:	Due Dates
Chapter 3 "Responsibility in Engineering"	Module 4 Formal Discussion – 1 Initial Post	Sept 27, 2024
Module Content	Module 4 Formal Discussion - 2 Response Posts	Sept 29, 2024

Module 5: Tensions Between Responsibilities and Organizations

To Read/Review:	To Do:	Due Dates

Chapter 4 "Engineers in Organizations" *Module Content*	Module 5 Assignment	Oct 6, 2024

Module 6: Trustworthiness in Relationships

To Read/Review:	**To Do:**	**Due Dates**
Chapter 5 "Trust and Reliability"	Module 6 Reflective Discussion - 1 Initial Post	Oct 12, 2024
Module Content	Module 6 Reflective Discussion – 1 Response Post	Oct 13, 2024

Module 7: Responsibility in Design and Operation of Products or Engineered Systems

To Read/Review:	**To Do:**	**Due Dates**
Chapter 6 "The Engineer's Responsibility *to Assess and Manage Risk"*	Module 7 Formal Discussion – 1 Initial Post	Oct 18, 2024
	Module 7 Formal Discussion – 2 Response Posts	Oct 20, 2024
Module Content		

Module 8: Cultural Diversity in Engineering

To Read/Review:	**To Do:**	**Due Dates**
Chapter 8, "Engineering in the Global Context"	Module 8 Reflective Discussion – 1 Initial Post	Oct 26, 2024
Module Content	Module 8 Reflective Discussion – 1 Response Posts	Oct 27, 2024
	Module 8 Quiz	Oct 27, 2024
	Module 8 – Stage One of Final Essay	Oct 27, 2024

Module 9: Engineering Meets Environmental Ethics

To Read/Review:	**To Do:**	**Due Dates**
Chapter 7, "Engineering and the Environment"	Module 9 Formal Discussion – 1 Initial Post	Nov 1, 2024
Module Content	Module 9 Formal Discussion - 2 Response Posts	Nov 3, 2024

Module 10: Human Engineering Meets Animal Ethics

To Read/Review:	**To Do:**	**Due Dates**
Module Content	Module 10 Reflective Discussion – 1 Initial Post	Nov 9, 2024
	Module 10 Reflective Discussion – 1 Response Post	Nov 10, 2024
	Module 10 Quiz	Nov 10, 2024

Module 11: Future Challenges for Engineers

To Read/Review:	**To Do:**	**Due Dates**

Chapter 9 "New Horizons in Engineering"	Module 11 Formal Discussion -1 Initial Post	Nov 15, 2024
Module Content	Module 11 Formal Discussion - 2 Response Posts	Nov 17, 2024

Module 12: Selected Topics in Applying Ethical Engineering

To Read/Review:	*To Do:*	*Due Dates*
	Module 12 Formal Discussion - 1 Initial Post	Nov 22, 2024
Module Content	Module 12 Formal Discussion - Response Posts	Nov 24, 2024

Module 13: Wrap-up and Review (Two weeks)

To Read/Review:	*To Do:*	*Due Dates*
Module Content	Module 13 Reflective Discussion - 1 Initial Post	Dec 7, 2024
	Module 13 Reflective Discussion – 1 Response Post	Dec 11, 2024
	Module 13 Stage Two - Final Essay	Dec 11, 2024

Textbook Reading: This course requires a great deal of intellectual and philosophical ground to be covered. The course is rather reading-intensive, as the readings form the basis of all other course activities. Hence, the student must carefully complete all readings before contributing to a discussion forum or engaging in a course-related activity. In other words, you must complete the readings, complete them well, and do this before attempting anything else. These are necessary to derive benefit from the course.

Quizzes/Exams: To take exams in this course, you must use Respondus LockDown Browser. This program prevents you from printing, copying, going to another URL, or accessing other applications during a quiz. Watch this video to get a basic understanding of LockDown Browser. Please take the following steps when taking a quiz:

1. Download and install LockDown Browser from this link:
2. Once your download and installation has finished, log into Canvas using your standard browser.
3. From your Dashboard or under "Courses", click on the course in which you have to take the exam that requires LockDown Browser.
4. After you enter the course, find the exam and click on it.
5. A new tab will open with a message stating "Assessment Loading". You will also see a pop-up window asking you to open Lockdown Browser. Click "Open Lockdown Browser".
6. Lockdown Browser will automatically launch and your quiz will be loaded into Lockdown Browser. Click "Begin" to take the quiz. Once a quiz has been started with LockDown Browser, you cannot exit until the "Submit Quiz" button is clicked.

Questions or problems can be submitted via web form by going to: **https://servicedesk.njit.edu** and clicking on the "Report your issue online" link. You may also call the IST Service Desk with any questions at 973-596-2900.

Grading System:

A   93 - 100

B+   87 – 92.9

B   83 – 86.9

C+   77 – 82.9

C   73 – 76.9

D   65 – 72.9

F   0 – 64.9

Attendance and participation are essential in this class. In an online class, attendance is partially determined by participation and the times a student accesses the course and materials. To be successful in this class, plan on accessing our environment multiple times per week. Please do not wait until the last minute to submit your assignments; that will not give you the time needed to learn about the week's topic or ask questions promptly should you need help.

Your participation will also be tracked through Canvas Grades. The statistics that can be gathered include the date of last participation, which folders have been viewed and when, and how many assignments have been submitted, along with when they were submitted and how well you did. It is through this data that I can also partially determine your participation.

You can find each assignment and due dates by going to our Canvas Syllabus, looking at the course Calendar, or downloading the Assignment Calendar. ***This is not a work-at-your-own-speed class; assignments submitted past the published due dates may not be graded, and those points are not included in your final grade.***

Late Policy: Late assignments and quizzes will be penalized 10% for each day late. Discussion posts are not assignments and will only be accepted by the Sunday due date each week. The late penalty for discussions is assessed according to the due date of the initial post each week. It is impossible to duplicate the discussion board's interactive nature when the discussion is over for a given module week. The discussion board will be closed for that module week, and class members will not respond to messages or posts after the discussion has ended.

If you know you will be offline the day an assignment is due, please submit it early. No assignments will be accepted after the final day of class. Students with an excused absence (hospitalization, jury duty, or family emergencies) may be asked to produce proper documentation to make up work. All makeup work is at the discretion of the instructor.

Late Policy and Make-ups for Missed Course Work: Students may be able to make up the course work or requirements missed due to authorized absences. This applies, however, only to certain types of assignments. Per College policies, an instructor is not required to provide alternative experiences that cannot be easily duplicated, such as online discussions. Late assignments will be penalized 10% for each day late. Notice that I may only allow partial make-up for missed activities and assignments. For

coursework that is missed not due to the circumstances qualified for "authorized absences" as defined by the College, no make-up work is allowed.

Discussion posts are not assignments and will only be accepted by the Sunday due date each week. The late penalty for discussions is assessed according to the due date of the initial post each week. It is impossible to duplicate the discussion board's interactive nature when the discussion is over for a given module week. The discussion board will be closed for that module week, and class members will not respond to messages or posts after the discussion has ended.

Late Submission Instructor Grading Policy: Given the instructor's regular workload and other responsibilities, late assignments will be graded as soon as possible. However, due to the additional management required for late submissions, I cannot guarantee an immediate turnaround on grading. Your patience and understanding in this matter are greatly appreciated.

No assignments will be accepted after the final day of class.

It is important to understand that each student is responsible for their own attendance and communication about that attendance with the instructor and for any work missed due to absences of any kind. In other words, the instructor bears no responsibility for informing you that you are missing an assignment or late in submitting a project. Nor is it incumbent upon the instructor to notify the student that they are not making a satisfactory grade or progress in the course. The instructor also has a fair amount of discretion in setting policies regarding late submission and completion of coursework and make-up work that could be a substitute for initially assigned work—if possible or feasible.

Extra Credit Policy: All assessments are designed to evaluate your understanding and mastery of the material fairly. There are no extra credit assignments in this course to maintain the integrity and rigor of the course. Students are encouraged to focus on the scheduled assignments, discussions, quizzes, and exams to maximize their learning and performance throughout the semester. Your final grade will reflect the scores earned on these assignments alone.

Academic Integrity: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree to which you are working. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that my professional obligation and responsibility is to report any academic misconduct to the Dean of Students Office. Any student found violating the code by cheating, plagiarizing, or misusing any online software will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the Code of Academic Integrity, please get in touch with the Dean of Students Office at dos@njit.edu

Information Literacy: Knowing how to find, cite, and reference your sources is integral to your success in this course. The best resources are course materials and the online lectures and presentations, as both were (1) written by academic experts and (2) peer-reviewed.

All of your assignments will be automatically submitted to **Turnitin.** Since plagiarism is not always intentional, this tool helps students protect themselves from possible plagiarism scenarios while also assisting instructors with

identifying apparent attempts at plagiarism. Once your essay has been submitted, Turnitin will analyze it for a percentage of the possibly plagiarized essay and identify any areas that need editing to reduce plagiarism. The instructor also reserves the right to check your discussion assignments if they suspect the academic integrity policy is violated. However, this is more an opportunity to help you learn how to properly cite your work and maintain a culture of academic integrity than a policing system.

You may view your **Turnitin (TII) Originality Similarity Report** and make any necessary edits to ensure your submission complies with NJIT's correct citation and academic integrity policies. Read the individual instructions for the number of submission attempts you are allowed per assignment.

The objective is to keep the plagiarism **similarity score under 30%,** denoting proper quotes and common phrase citations. A similarity scores of 30% or more from the TII report signify extensive matching content and will be scrutinized for plagiarism and proper references. Aim to write in your own words, appropriately citing paraphrases and quotes using APA style.

Generative Artificial Intelligence (AI), Coursework Recycling, and Third-Party Hiring:
The University forbids the submission of previously submitted work from other courses, as well as contracting third parties to complete coursework. This includes using generative AI tools, such as ChatGPT, Bard, Copilot, GrammarlyGo, and Adobe Firefly, which are not permitted for any coursework in this class. Additionally AI tools such as Quillbot that "spin words" will also be detected and are prohibited. The student must independently create all work. Representing work created by AI as your own is plagiarism and will be prosecuted as such. Breaches of this policy will be regarded as academic dishonesty and may lead to failure of the assignment or course, along with formal reporting to the governing academic authorities.

Any assignment with a **Turnitin TII AI report indicating 20%** or more AI-generated content will be investigated for potential plagiarism. Additionally, the use of paraphrasing tools like Quillbot does not exempt your work from detection or this policy, and their use should generally be avoided.

If cheating through AI generation or any other means is detected (as evidenced by Turnitin flags, similarity scores, AI-generated reports, or other evidence), the instructor reserves the right to:

- Re-evaluate and potentially adjust grades on previous assignments.
- Impose penalties as outlined in the course syllabus or university academic integrity policy.

Respondus Lockdown Browser: This course utilizes Respondus LockDown Browser to maintain academic integrity during online quizzes, tests, and exams. This software restricts your computer activity to the testing environment, preventing access to other websites, applications, or communication tools. You must remain on the testing screen for the entire duration of the assessment. Attempting to circumvent LockDown Browser or accessing prohibited resources during the assessment will be considered a violation of academic integrity. Assessment activity will be monitored through the LockDown Browser audit log to ensure compliance.

Any violation of these guidelines may result in disciplinary action, including but not limited to:
- A zero on the assessment.
- Referral to the academic integrity board for further review.
- Potential consequences outlined in the university's academic integrity policy.

Adhering to these guidelines contributes to a fair and honest learning environment for all students. If you have any questions or concerns about LockDown Browser, please don't hesitate to ask.

Disability Statement: By Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, this college strives to ensure that "no otherwise qualified individual with a disability shall, solely because of their disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program" administered by the University. If you are a student who requires academic accommodations due to a disability, please get in touch with the disability support office.

Student Code of Conduct: Respect for the rights of others and for the College and its property are fundamental expectations for every student. The Student Code of Conduct outlines behavioral expectations and explains the process for responding to allegations of student misconduct. In other words, no trolling. **Remember, you are not anonymous online.** Students are expected to respond and write professionally and appropriately when activities are assigned to create scenarios, discuss beliefs, present on a selected subject, or post to the web board. Inappropriate or harmful language will not be tolerated and could result in disciplinary measures and a failing grade for the class.

Instructional Requirements and Support: You should have the following: At least an Intel or AMD 2.0 GHz processor, but an Intel Dual Core 2 Duo would be best. At least 2 Gb of memory (RAM), but 4 Gb would be best. A broadband Internet connection (DSL, cable, or T1). A 56K dial-up connection should work but is not recommended. Have the recommended software, Microsoft Office, and Adobe Acrobat Reader. Scan your PC for viruses each week and keep up-to-date with the latest virus definitions and Windows updates. If you have questions about your computer and the technology used at the college please call the Student Help Desk.

Trigger and Content Warnings: In this course, we'll explore topics that might touch on sensitive issues such as death, injury, cultural differences, and oppression. It's important to differentiate between being triggered by personal trauma and feeling intellectually challenged. If you're a trauma survivor and come across triggering content, please prioritize your emotional well-being, which can include requesting an alternate assignment or speaking with a university therapist. While opting out of a discussion may be necessary for your comfort, you'll still need to engage with the course material, and we can find alternative ways to do so. Experiencing discomfort from new ideas is often part of the learning process, and it's critical to your intellectual and personal growth. If course content proves distressing, campus resources like the Student Health Department and Dean of Students Office are available for support. Remember, I'm here to assist you throughout your learning journey in this class.

Faculty Reserves the Right to Change Syllabus - Subject to Change Clause: While information and assurances are provided in this course syllabus, it should be understood that content may change in keeping with new research and literature and that events beyond the instructor's control could occur. Students will be informed of any substantive occurrences that will produce syllabus changes.

Religious Holidays: To appreciate religious diversity, students who desire to observe a religious holiday during a scheduled class meeting should request reasonable consideration by the end of the second week of the course.

Course and Instructor Evaluation: The University values student feedback as part of its ongoing quest for excellence in education. Using a standard evaluation instrument, you can evaluate this course and provide the instructor with feedback and comments. Commitment to the teaching and learning process requires each student to complete this evaluation as part of the ongoing revision of this course and instructional competence. Your participation in this process is an expectation of this course.

Non-Discrimination Statement: NJIT (the "University") is committed to maintaining an environment free of illegal discrimination and harassment for all faculty, staff, students, and third parties. In keeping with that policy, the University prohibits discrimination and harassment by or against any faculty, staff member, student, applicant for admissions or employment, customer, third-party supplier, or any other person (collectively the "University

Community") because of their race, color, religion, national origin, sex, sexual orientation, gender identity, pregnancy, ancestry, age, disability, genetic information, veteran status, or any other legally-protected class (collectively "protected statuses").

Student Health and Well-Being: As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating, and lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The University is committed to advancing its students' mental health and well-being. You can learn more about the broad range of confidential mental health services available on campus.