

Tech Ethics: Engineering Principles — Ethics and Responsibility

Objective and Overview

You participated in an exercise in Ethics and Responsibility. The objective of this assignment is to give you a chance to think deeply about your values and choices. You will also exercise the skills discussed to analyze another situation.

Reflection

Write 2–3 paragraphs to answer the following questions:

1. What is a personal value of yours you'd like to bring into your engineering career?
2. Give a scenario where this value is implicated. You should use the short exercise you did before break as a guide.

Analysis

Write 2–3 paragraphs, analyzing the following situation:

You're on a team designing integrated circuits for commercial HVAC ¹ systems. Your company does not sell the HVAC units directly, but is a key supplier to many HVAC firms. Over the past few years, your team has seen a growth in replacement part requests as some of the sensing components in the circuit seem to be failing and causing the HVAC units to over-run themselves. You and several of your team members recognize that there may be some weaknesses to your current chip design and tell your team lead you'd like to spend this year doing some deeper analysis of the system robustness and searching for more reliable components. Your team lead says not to make this a priority because the chips failing actually means increased demand for more components from our company and this department. "Why put yourself out of a job?" Your team lead reports to the senior product manager who you rarely work with, but who always speaks about reliability at the monthly department meetings.

Think about a list of the ethical challenges present in this case. Think about what do you would do. What strategies could you consider employing?

Pick one of the core concepts discussed and explain how it applies to your situation in the scenario.

¹Heating, Ventilation and Air- Conditioning

Mechanics

Create a PDF document with your answers. The document should be easily readable.

Submit your PDF document to Gradescope. Submit your document to the "Tech Ethics" assignment.

The PDF document must be submitted by 5:00pm on the day following your lab exercise. In other words:

Section	Lab Day	Deadline
A	Tuesday	5pm on Wednesday
B	Wednesday	5pm on Thursday
C	Thursday	5pm on Friday

Note that the Gradescope assignment is for all sections, so the deadline shown in Gradescope may be later than your actual deadline. Ensure you submit your work by the deadline listed in the table above.

This work must be accomplished individually. Do not discuss or show the contents of your solution to any other student. This would be a sadly ironic assignment on which to get an Academic Integrity Violation (AIV).

Grading

This assignment is worth 60 points.

You will be graded on:

Clarity and Thoroughness: Did you answer the prompt given? Was your writing grammatically correct and easy to follow?

Depth of Thought: Did you show deep reasoning beyond a surface-level treatment of the ideas? Did you do a reasonably sufficient level of analysis or unpacking of core concepts? Did your presentation show a sophisticated understanding rather than a simple or base-level interpretation?

Creativity and Originality: Were your arguments and expressions unique to yourself? Did your arguments show that you individually engaged with the ideas and brought something unique to the table? Or were your responses cookie-cutter such that they could have been pulled from an online source or made up without referencing the class activity?

Correct Use of Terms and Concepts: Did you use the ethics concepts correctly and apply them appropriately to the case and questions? Did you take the opportunities provided to use the appropriate terms and concepts?