

## **ENGR 399: Impact of Engineering on Society**

### **CONTACT INFORMATION**

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Instructor:

Dr. Daniel Lacks ([djl15@case.edu](mailto:djl15@case.edu)), Adelbert 216. Office hours: Thurs 11:30am-12:30pm

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### **COURSE DESCRIPTION**

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As engineers, we design and implement technical solutions with the goal of improving people's lives, locally and globally. However, technical solutions can have disparate impacts, in that they are beneficial to some people but less beneficial, or even detrimental, to others. What are our ethical and professional responsibilities to understand, consider, and address the impacts of our work on the affected local and/or global populations?

### **COURSE OBJECTIVES**

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After completing this course, you will be able to:

- Recognize the complexities of engineering solutions in various fields of engineering, from the underlying scientific and engineering principles to the potential societal impacts.
- Apply ethical theories in the analysis of engineering projects.
- Understand the viewpoints of others regarding disparate impacts of technology.
- Address the consequences of engineering solutions in a global context.

### **RELATIONSHIP TO CWRU GENERAL EDUCATION REQUIREMENTS**

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This course satisfies three perspectives in the CWRU General Education Requirements:

- Perspective: Moral and Ethical Reasoning
- Perspective: Understanding Global Perspectives
- Perspective: Human Diversity and Commonality

## **GRADING**

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Class assignments (12 @ 2.5% each):	30%
Asynchronous assignments (10 @ 6% each):	60%
Final presentation:	10%

The grades will be assigned as follows: A is 90.00% or above; B is 80.00% to 89.99%; C is 70.00% to 79.99%; D is 60.00% to 69.99%; F is below 60.00%.

Class assignments: Must be submitted in Canvas by the end of the class period (unless deadline changed by instructor). There is no opportunity for turning these assignments in late or for make-up assignments, except in the case of conflicting official university activities. The two lowest scores are dropped to allow for absences, bad days, etc.

Asynchronous assignments: Must be submitted in Canvas by the deadline to receive full credit. Late assignments will be accepted, but with 50% penalty. No scores are dropped.

## ENGR 399 Spring 2025

### COURSE SCHEDULE

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ENGR 399 will typically hold lectures on Tuesdays, with asynchronous content replacing the Thursday lecture. This approach allows you to choose from a variety of asynchronous assignments, enabling you to select the one that best aligns with your interests.

Week	Lecture*	Asynchronous
1	Tues Jan 14: Introduction to Ethics Thurs Jan 16: Factual-Conceptual-Moral	
2	Tues Jan 21: Highways	Async assignment 1
3	Tues Jan 28: Water Diversion	Async assignment 2
4	Tues Feb 4: Engineering Personal Ethics	Async assignment 3
5	Tues Feb 11: Safety and Risk – part 1	Async assignment 4
6	Tues Feb 18: Safety and Risk – part 2	Async assignment 5
7	Tues Feb 25: Intellectual Property – part 1	Async assignment 6
8	Tues Mar 4: Intellectual Property – part 2	
	Spring Break	
9	Tues Mar 18: Personal Finance (guest lecture)	Async assignment 7
10	Tues Mar 25: Art (guest lecture)	Async assignment 8
11	Tues Apr 1: Biomedical	Async assignment 9
12	Tues Apr 8: AI	Async assignment 10
13	Tues Apr 15: Environmental	Prep for final presentation
14	Tues Apr 22: Techno-Futuristic Ideologies in Silicon Valley	Final presentation

\*Important: Schedule may change: A lecture may be held on a Thursdays if scheduling issues necessitate.

## **COURSE POLICIES**

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**Academic Integrity Policy:** All students in this course are expected to adhere to University standards of academic integrity. Cheating, plagiarism, misrepresentation, and other forms of academic dishonesty will not be tolerated. This includes, but is not limited to, consulting with another person during an exam, turning in written work that was prepared by someone other than you, making minor modifications to the work of someone else and turning it in as your own, or engaging in misrepresentation in seeking a postponement or extension. Ignorance will not be accepted as an excuse. If you are not sure whether something you plan to submit would be considered either cheating or plagiarism, it is your responsibility to ask for clarification. For complete information, please go to

<https://students.case.edu/community/conduct/aiboard/policy.html>

**Disability Resources:** ESS Disability Resources is committed to assisting all CWRU students with disabilities by creating opportunities to take full advantage of the University's educational, academic, and residential programs. For further information, please go to

<https://students.case.edu/academic/disability/>