

ENGR/CS 186  
Ethics for Computer Scientists  
4 credits

**Learning Objectives:**

The course will equip students with a deep understanding of ethical challenges in contemporary computer technology. By the end of this course, students will be able to examine the societal impact of technologies and determine their alignment or misalignment with societal values, as well as understand the ramifications of technology on core ethical principles, encompassing agency, responsibility, and privacy.

**Summary of Course Assignments:**

<b>Assignment</b>	<b>Percentage of Final Grade</b>	<b>Due Date</b>
Class Participation	<b>15%</b>	
Reading quizzes	<b>20%</b>	
Midterm project	<b>25%</b>	<b>Week 5</b>
Final paper	<b>40%</b>	<b>Week 10</b>

***Reading Quizzes***

In certain weeks, at the beginning of the lecture, students will be required to participate in a quiz designed to assess their comprehension of the assigned material. During the quiz students will encounter a diverse range of question formats, including true or false statements, multiple-choice, and brief-open ended questions.

***Midterm Project***

Students will work in teams to design an AI-based application while exploring the ethics of technology. Throughout the project, groups will identify potential ethical concerns, brainstorm mitigation strategies, and document their ethical decision-making process.

***Final Essay***

The final essay will follow a structured philosophical format. The paper is expected to meticulously articulate a well-defined position or interrogate an ethical question, and systematically construct the student's argument in a clear and cogent manner. Within the framework of the final essay assignment, students will have the autonomy to select their own topics, provided that their chosen subject matter aligns with the overarching themes and content of the course.

**Overview of the weekly modules:**

<b>Week</b>	<b>Description</b>
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<b>1: Introducing the Ethics of Technology</b>	Intersection of ethics and technology, emphasizing the underlying principles that guide technologists and the real-world implications of their decisions.
<b>2: Foundations of Ethics Theory</b>	Overview of foundational ethical theories, covering both Western and non-Western approaches.
<b>3: Bias &amp; Discrimination in Technology</b>	Issues on bias and discrimination inherent in many modern technologies. Exploration of how seemingly neutral algorithms and systems can perpetuate and exacerbate social inequities.
<b>4: Privacy &amp; Data Ethics</b>	Understanding the domain of privacy, security and data ethics - three pillars of the data-driven age. Focus on ethical concerns surrounding surveillance, data collection, and personal information dissemination.
<b>5: Trust &amp; Technology</b>	Focus on the role of trust as a cornerstone of digital systems' successful integration and acceptance.
<b>6: Responsible AI</b>	Overview of ethical imperatives of developing and deploying AI responsibly. Engagement in discussions around fairness, accountability, transparency, and human-AI collaboration.
<b>7: Technology &amp; Labor</b>	Overview of ethical issues arising from the interplay between technology and labor. Exploration of the multifaceted impacts of technology on employment, job displacement and emerging work paradigms.
<b>8: Technology &amp; the Environment</b>	Understanding the environmental footprint of technological advancements, both positive and negative.
<b>9: Technology, Justice &amp; Governance</b>	Focus on the ethical implications of automating government decisions and alternative frameworks for democratic participation through technology.
<b>10: Responsible Approaches to Emerging Technologies</b>	Overview of three emerging technologies: quantum computing, bioengineering, and artificial general intelligence. Focus on the ethical implications involved in their development and deployment.