

Computer Ethics

Syllabus

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Introduction

This course is an introduction to ethical issues that arise in computer science, engineering, IT, and computing contexts. The increasing ubiquity of computers, software, the internet, and algorithms in all facets of life have led to new and pressing ethical problems and dilemmas. While much of the work on these issues is being done by policy makers, lawyers, and philosophers, they cannot be properly understood or addressed without the participation of computer scientists. Technical expert input from those working in the field is thus essential to addressing the wide variety of ethical issues that computers and computing give rise to. However, those working in the field also need an understanding of how to make ethically appropriate decisions, which can be difficult to do without a proper perspective and understanding of ethical, legal, and social issues relating to computers and computing.

This course is designed to provide computer science students with an understanding of the central ethical issues that arise in their discipline, without assuming any background in philosophy or ethical theory. Students will be provided with a framework of philosophical ethics for technology which we will use to consider a variety of issues, including: (a) what ethical theory is appropriate for new and emerging technologies and computer technologies in particular, (b) what ethical problems predictive algorithms give rise to, (c) who owns, or should own, computer software and what constitutes fair use, (d) how internet connectedness, software, and social media may undermine our right to privacy and why privacy is important, as well as what role governments should play in regulating the private cyber lives of their citizens, (e) the reliability and security of computer systems and the ethics of hacking and cybersecurity, (f) the nature, scope, and justification of professional ethics codes for computer scientists, and (g) questions of distributive justice and equitable access to cyber technologies.

Course Goals and Outcomes

By the end of the course, students will:

- Understand, express, and evaluate some of the core ethical issues that arise in computer science and engineering.
- Gain an understanding of ethical issues regarding specific technologies, including social media, algorithms, surveillance technologies, and AI and machine learning.
- Have a basic familiarity with philosophical ethics and how it applies to IT.
- Develop skills of critical analysis, reading comprehension, argument summary, and information synthesis, both written and verbal.
- Gain the ability to apply ethical principles and decision making in IT contexts through the evaluation of various case studies.
- Have a grasp of, and an appreciation for, the wide range of ways that computer science intersects with the social sciences, humanities, and human values.

Texts

There are two required texts for this course, Michael J. Quinn, *Ethics for the Information Age*, 7th ed., Pearson (2017) and George Orwell, *1984* (any edition). All other materials, including other readings and media, will be made available on the course website.

Grading

Final grades will consist in the following course components:

Oral Presentations	10%
Reading Responses	20%
Case Study Papers	40%
Final Exam	20%
Class Participation	10%

Scale: 90-100%=A, 80-89%=B, 70-79%=C, 60-69=D, 0-59%=F

Assignments

A breakdown of the assignments is below. More detailed instructions are on the course website.

Oral Presentations

There is an oral presentation, worth 10% of your grade. These projects will be presented throughout the semester and will be done in small groups of two or three, with one or two groups presenting each class. Presentations will involve a discussion, interpretation, and ethical evaluation of a legal ruling that relates to computers and computer science.

Reading Responses

Students will complete short reading responses throughout the semester. There are one to three questions for each reading which students will answer and submit on the course website. They are due at the beginning of class in which the reading is assigned. Some of these are reading comprehension questions, some are open-ended invitations for thoughts on a topic, and some are requests for questions about something you didn't understand in the reading. Collectively, these are worth 20% of your grade.

Case Study Papers

There are four case study assignments each worth 10% of the final grade, spaced roughly evenly throughout the semester. Each will involve a specific, real life case study relating to one of the topics we discussed in class that you will analyze from an ethical/philosophical perspective, using the theories and concepts we learned this term. Each case study assignment will have a set of questions/prompts about the case which you will address. You will discuss the most important/relevant details of the case and then you will offer recommendations for the most ethical course of action, whether this agrees with that which was actually taken or not.

Final Exam

There is a final exam (cumulative over the semester) worth 20% of your final grade. The exam will involve a series of short and long answer questions based on the texts and topics we covered and it will be scheduled during the standard final exam period at the end of term.

Class Participation

There is a participation component, worth 10% of your final grade. Your being attentive and actively engaged in lecture will be reflected in your participation grade. This grade will start off at 100%, but can be negatively affected by unexcused absences and if you are disruptive in lecture (on your phone, regularly arriving late, interrupting others, etc.).

Course Schedule

Below is a provisional course schedule. Readings and schedule are subject to change.

Week	Reading	Miscellaneous
Week 1: Introduction	Quinn Ch. 1 “Catalysts for Change”	
Week 2: Ethics for Technology	Quinn Ch. 2 “Intro to Ethics” Ferré, “Ethics, Assessment and Technology”	Group Presentation Dates Assigned
Week 3: Communication and Computer Ethics	Quinn Ch. 3 “Networked Communications” Mittelstadt et al., “The Ethics of Algorithms”	
Week 4: Intellectual Property	Quinn Ch. 4 “Intellectual Property”	First Case Study Due
Week 5: Intellectual Property	Nissenbaum, “Should I Copy My Neighbor’s Software?” Stallman, “Why Software Should be Free” Kahin, “The Software Patent Crisis”	
Week 6: Privacy	Quinn Ch. 5 “Information Privacy” Singer, “Visible Man: Ethics in a World Without Secrets”	Watch: <i>The Social Dilemma</i>
Week 7: Privacy	Quinn Ch. 6 “Privacy and the Government” Laudon, “Information Systems in a Democracy”	Second Case Study Due
Week 8: Privacy	Orwell, <i>1984</i> Rachels, “Why Privacy is Important”	
Week 9: Security and Cybercrime	Quinn Ch. 7 “Computer and Network Security”	

	Denning and Drake, “A Dialogue on Hacking and Security”	
Week 10: Security and Cybercrime	Quinn Ch. 8 “Computer Reliability” Eisenberg, “The Computer Worm” Lewis, “Between a Hacker and a Hard Place”	Third Case Study
Week 11: Professional Ethics for Computer Scientists	Quinn Ch. 9 “Professional Ethics” ACM, <i>Code of Ethics</i>	
Week 12: Distribution and Access	Quinn Ch. 10 “Work and Wealth” Civille, “The Internet and the Poor”	
Week 13: Course Wrap-up	No readings	Fourth Case Study Due

Final exam to be scheduled during the official exam period.