

CS 4001 - Computerization in Society

Course Organization

This course is primarily built around reading and writing assignments and class discussions, including formal debates. Substantial practice of oral and written communication skills is a fundamental aspect of the course.

Topical Outline

1. Techniques of Rhetoric and Logical Argumentation. Arguments as claims supported by reasons. Types of argument concerning the social consequences of computing and the aptness of computing-related policies. Evidence, authority, and the anticipation and rebuttal of objections. Communicating with professional peers, customers, and the public.
2. Impact of Computing on Society, Individuals and Organizations. Effects of computer use on social behavior, job satisfaction, organizational structure, and social stratification (e.g. the digital divide and gender disparities in computer science education).
3. Ethical Foundations. Deontology as the basis for policymaking and legislation relevant to computing; software as a mechanism for encoding and enforcing business practices, and norms of conduct. Consequentialism as the basis for policymaking and design decisions: Assessing and balancing the benefits and costs of alternatives to stakeholders. Virtue ethics as the basis for professional conduct and resolution of moral dilemmas (e.g. whistle-blowing).
4. Governance and Regulation. Governmental and non-governmental regulation of the dissemination of computing technology (e.g. Export controls, regulation of the Internet and wireless communications, professional bodies). Jurisdiction and community standards in an age of virtual and global commerce.
5. Free Speech and Content Constraints. Constitutional protections and restrictions. Anonymity, censorship, the protection of minors, etc. Special problems raised by digital media and the Internet.
6. Intellectual Property. Patent and copyright principles as they apply to software and digital media. Ownership and licensing compared. Proprietary technology and reverse engineering. Technology for intellectual rights management (e.g. DVD encryption).
7. Privacy. Personal information, its disclosure and misuse. Identity theft. Privacy-protection principles, laws, and technology. Surveillance and changing interpretations of the Fourth Amendment.
8. Security. Hacking compared to vandalism, trespass and theft. Major security threat categories, their countermeasures and social consequences. Encryption, information warfare and national security.
9. Professional Responsibility. Professions as more than jobs requiring expertise. Software development compared to established professions. Professional codes of conduct, their validity, effectiveness and scope. Social responsibility and personal and corporate accountability and liability for harm.