School of Computing & Information Sciences

Course Title: Technology in the Global Arena **Date:** March 25, 2020

Course Number: CGS 3095

Number of Credits: 3

Subject Area: IT/CS core	**Subject Area Coordinator**: Richard Whittaker **Email**: rwhittak@cis.fiu.edu
Catalog Description: Legal, ethical, social impacts of computer technology on society, governance, quality of life: intellectual property, privacy, anonymity, professionalism, social identity in the U.S. and globally.	
Textbook: Suggested: Computer Ethics – A Global Perspective, by Giannis Stamatellos	
References:	
Prerequisite Courses: (COP 2250 or COP 2210) and ENC 3213	
Corequisite Courses: None	

Type: Lecture with forum discussions

Prerequisites Topics:

- Programming experience, English technical writing

Course Description

Computing technologies, including the Internet, have led to an increase in opportunities for collaboration and interaction among societies around the world. As additional computing power, storage, and network bandwidth become available, the capabilities of interconnected systems become more and more powerful. This course aims to introduce students to the legal, social, and ethical issues that are brought about by the globally-connected Internet and continuing increases in computing power. These issues, including privacy, security, intellectual property, anonymity, civil liberties, and cultural integrity will be explored from the perspectives of different global societies and through the professional standards adopted by global computing organizations. The goal of this course is to enable computing professionals to make informed ethical decisions that account for societal differences regarding the technologies that they develop and administer.

Course Outcomes

1. Discuss the legal, ethical, and social impacts of technology as related to intellectual property rights, and how the global reach of the Internet affects these issues.
2. Discuss the legal, ethical, and social impacts of technology as related to individual privacy, security, and anonymity across the globe and in the global Internet society.
3. Discuss a computing professional's roles and responsibilities as related to intellectual property, privacy, anonymity, legal, social, and ethical issues.
4. Recognize the special issues that virtual worlds and social media present to intellectual property, privacy, security, anonymity, social identity, and social inclusion.
5. Recognize the global impacts of the technological divide among diverse populations around the world.
6. Create and deliver a professional presentation on global technology impact issues.
7. Explain strategies for continued professional development.
8. Produce a research paper on global technology impact issues.

Topic	# of Lecture Hours	Selected Readings Chapters refer to the Stamatellos textbook. Other readings will be available via Moodle and the WWW	Outcome
• Unique aspects of computing technology ○ Unique problems created by technology	1	"Reason, relativity, and responsibility in computer ethics," James Moor "Unique ethical problems in information technology," Walter Maner	1-8
• Intellectual property issues ○ Patents, copyrights, and trademarks in the U.S. and abroad ○ Software piracy, licensing, and patents ○ Media piracy ○ Reverse engineering of hardware or software ○ Transnational issues concerning intellectual property ○ Technology's roles in protecting IP and infringing on IP rights	2	Chapter 4 "Proprietary Rights in Computer Software: Individual and Policy Issues," Deborah Johnson	1
• Privacy and security issues ○ U.S. Fourth Amendment rights and digital content ○ Governments' rights and responsibilities to prevent cyber or physical attacks vs. individual privacy rights ○ Privacy issues in the global arena: cultural, social, and legal aspects around the world ○ Privacy in the workplace	2	Chapters 2&3 "Towards a theory of privacy in the information age," James Moor	2
• Anonymity issues ○ Anonymity's role in freedom of expression ○ Anonymity's role in criminal or unethical activities	2	Chapter 3 "Anonymity, Psuedonimity, or Inescapable Identity on the Net", Deborah Johnson & Keith Miller "Anonymity Tools for the Internet," Brian Kim, et al.	2
• Freedom of expression and civil liberties issues ○ Ethical and legal basis for technological privacy protection ○ Ethical and legal framework for freedom of information ○ Freedom of expression in cyberspace vs. cultural, social,	2	Chapter 3 "CDT's Guide to Online Privacy"	3,4

and legal issues in other societies ○ International and intercultural implications of technology use and technology commerce			
• Software and critical public infrastructure ○ Proprietary software protection vs. government's requirements for public safety and disaster prevention/recovery ○ Risks of computing in the implementation of public policy and government (e.g., electronic voting, electronic health records, etc.)	1	Chapter 5 "Is the global information infrastructure a democratic technology?" Deborah Johnson "Therac-25 Case Materials"	1
• Professional roles and responsibilities ○ Purpose & appropriateness of professional codes of conduct ○ Acceptable use policies ○ Whistle-blowing ○ Role of professionals in global computing issues ○ Evaluate ACM/IEEE Codes of Ethics	2	Appendices A&B "Informatics and professional responsibility," Donald Gotterbarn "Using the New ACM Code of Ethics in Decision Making," Ronald Anderson, et al	1-5
• Computer-based games ○ Game developers responsibilities: do/should games teach ethical/unethical behaviors?	1	Chapter 10 "The Ethics of E-Games" Special Issue of the International Review of Information Ethics	3,4
• Professional Development ○ The need for continued professional development ○ Strategies for continued professional development	2	Chapter 5 "Teaching Professional and Ethical Aspects of Computing" Harjinder Rahanu	7
• Virtual worlds ○ Real-world laws & social customs for virtual worlds? ○ Economic, social, and legal issues in virtual worlds	2	Chapter 10 "Information Privacy in Virtual Worlds: Identifying Unique Concerns Beyond the Onine and Offline Worlds," Tal Zarsky	1-5
• Student presentations (ACTIVE LEARNING) ○ Individual research and presentations on related topics	19		1-8

Learning Outcomes: (Familiarity → Usage → Assessment)

Unique aspects of Computing Technology

1. Discuss the implications of unique problems created by technology [Familiarity]
2. Identify ethical issues of digital divide [Familiarity]
3. Discuss the ethical impact of technology and how its local and global reach affects these issues [Familiarity]

Intellectual Property Issues

1. Describe the role of patents, copyrights, and trademarks in the U.S. and abroad [Familiarity]
2. Examine the tradeoffs of software piracy, licensing, and patents [Usage]
3. Discuss the effects of media piracy [Familiarity]
4. Critique the reverse engineering of hardware or software [Assessment]
5. Investigate the impact of transnational issues concerning intellectual property [Usage]
6. Evaluate the impact of technology's roles in protecting IP and infringing on IP rights [Assessment]

Privacy and Security Issues

1. Discuss and interpret the role of U.S. Fourth Amendment rights in regard to digital content [Familiarity]
2. Analyze the relationship between governments' rights and responsibilities to prevent cyber or physical attacks vs. individual privacy rights [Assessment]
3. Critique Privacy issues in the global arena: cultural, social, and legal aspects around the world [Assessment]
4. Discuss the philosophical basis for privacy in the workplace. [Familiarity]

Anonymity Issues

1. Discuss Anonymity's role in freedom of expression [Familiarity]
2. Investigate the ramifications of Anonymity's role in criminal or unethical activities [Usage]

Freedom of Expression and Civil Liberties Issues

1. Describe the strengths and weaknesses ethical and legal basis for technological privacy protection [Familiarity]
2. Examine appropriate measures ethical and legal framework for freedom of information [Usage]
3. Evaluate freedom of expression in cyberspace vs. cultural, social, and legal issues in other societies [Assessment]
4. Compare International and intercultural implications of technology use and technology commerce [Assessment]

Software and Critical Public Infrastructure

1. Compare and contrast proprietary software protection vs. government's requirements for public safety and disaster prevention/recovery [Assessment]
2. Examine the tradeoffs and common risks of computing in the implementation of public policy and government [Usage]

Professional Roles and Responsibilities

1. Describe purpose and appropriateness of professional codes of conduct [Familiarity]
2. Examine acceptable use policies [Usage]
3. Discuss the stages of Whistle-Blowing [Familiarity]
4. Identify role of professionals in global computing issues [Assessment]
5. Evaluate ACM/IEEE Codes of ethics health records, etc. [Usage]

Computer-Based Games

1. Discuss game developers responsibilities [Familiarity]

Professional Development

1. Discuss the need for continued professional development [Familiarity]
2. Discuss strategies for continued professional development [Familiarity]

Virtual Worlds

1. Describe issues associated real-world laws and social customs for virtual worlds [Familiarity]
2. Examine various Economic, social, and legal issues in virtual worlds [Usage]

Student Presentations

1. Develop individual research and presentations on related topics [Assessment]

Oral and Written Communication:

Topic	Class Time	Student Performance Measures
All topics	Throughout the semester	Student prepares and delivers a presentation based on his/her research of a related topic (ACTIVE LEARNING)
All topics	Throughout the semester	Student prepares a research paper exploring a technology-related issue with global implications
All topics	Throughout the semester	Student participates in forum discussions about related topics (ACTIVE LEARNING)

Social and Ethical Implications of Computing Topics

Topic	Class Time	Student Performance Measures
All topics	Throughout the semester	Forum discussions (ACTIVE LEARNING), student presentations (ACTIVE LEARNING), and research papers

The Coverage of Knowledge Units within Information Technology Body of Knowledge

Knowledge Unit	Topic	Lecture Hours
SP.Professional Communications	Professional Communications	5
SP.Social Context of Computing	Social Context of Computing	3
SP.Intellectual Property	Intellectual Properties	2
SP.Legal Issues in Computing	Legal Issues in Computing	2
SP.Professional and Ethical Issues & Responsibilities	Professional and Ethical Issues & Responsibilities	3
SP.Privacy and Civil Liberties	Privacy and Civil Liberties	2

Source: Appendix A in Computer Science Curricula 2013 at:
https://www.acm.org/binaries/content/assets/education/cs2013_web_final.pdf

Sample Grading Policies

Assignments and Grading Weights

- Class Attendance/Participation/Quizzes: 40%
- Term Paper: 30%
- Class Presentation: 30%

Evaluation Method

Grades are based on the quality and quantity of each student's participation in class and via web-based forums, and on the quality of each student's paper and presentation. Components are graded as follows:

A. **Attendance, Discussions, Quizzes & Readings**: All assigned reading material must be completed in a timely manner to enable the student to participate fully in the discussions which are graded on quality and quantity.

B. **Term paper**: A well-researched, well-written term paper is a required element for this course. ***Failure to submit a paper is an automatic F grade. Submitting a highly plagiarized paper is an automatic F grade.*** The Term Paper will be graded on content, ethical analysis of the issue presented, grammar, style, and adherence to the formatting requirements. Scoring protocols will be provided.

C. **Class presentation**: You are required to make a 10-minute presentation to the class on the topic of your Term Paper. ***Failure to make your presentation at the scheduled time is an automatic F grade.*** Presentation will be graded on content, ethical analysis of the issue presented, interest level, and clarity. Scoring protocols will be provided.

Academic Honesty: Anti-plagiarism software is used to validate the authorship of your written assignments. Any paper which scores 20% or higher on the plagiarism measurement will be subject to a failing grade. Any evidence of this or other cheating will result in a failing course grade. See the section below on Academic Honesty for full details.