Course Title: Technology in the Global Arena

Course Number: CGS 3095

Number of Credits: 3

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Subject Area Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/CS core</td>
<td>Richard Whittaker</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:rwhittak@cis.fiu.edu">rwhittak@cis.fiu.edu</a></td>
</tr>
</tbody>
</table>

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: Required for CS Major

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.

<table>
<thead>
<tr>
<th>Topic</th>
<th># of Lecture Hours</th>
<th>Selected Readings</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unique aspects of computing technology</td>
<td>1</td>
<td>&quot;Reason, relativity, and responsibility in computer ethics,&quot; James Moor&lt;br&gt;&quot;Unique ethical problems in information technology,&quot; Walter Maner</td>
<td>1-8</td>
</tr>
<tr>
<td>o Unique problems created by technology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Intellectual property issues</td>
<td>2</td>
<td>Chapter 4&lt;br&gt;&quot;Proprietary Rights in Computer Software: Individual and Policy Issues,&quot; Deborah Johnson</td>
<td>1</td>
</tr>
<tr>
<td>o Patents, copyrights, and trademarks in the U.S. and abroad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Software piracy, licensing, and patents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Media piracy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Reverse engineering of hardware or software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Transnational issues concerning intellectual property</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Technology’s roles in protecting IP and infringing on IP rights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Privacy and security issues</td>
<td>2</td>
<td>Chapters 2&amp;3&lt;br&gt;&quot;Towards a theory of privacy in the information age,&quot; James Moor</td>
<td>2</td>
</tr>
<tr>
<td>o U.S. Fourth Amendment rights and digital content</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Governments’ rights and responsibilities to prevent cyber or physical attacks vs. individual privacy rights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Privacy issues in the global arena: cultural, social, and legal aspects around the world</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Technology in the Global Arena

<table>
<thead>
<tr>
<th>Topic</th>
<th>Chapter</th>
<th>Reference</th>
</tr>
</thead>
</table>
| **Anonymity issues** | 2 | "Anonymity, Pseudonymity, or Inescapable Identity on the Net", Deborah Johnson & Keith Miller  
| **Freedom of expression and civil liberties issues** | 2 | "CDT's Guide to Online Privacy" |
| **Software and critical public infrastructure** | 1 | "Is the global information infrastructure a democratic technology?" Deborah Johnson  
"Therac-25 Case Materials" |
| **Professional roles and responsibilities** | 2 | "Informatics and professional responsibility," Donald Gotterbarn  
| **Computer-based games** | 1 | "The Ethics of E-Games" Special Issue of the International Review of Information Ethics |
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]
Knight Foundation School of Computing and Information Science
CGS 3095
Technology in the Global Arena

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:

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

Social and Ethical Implications of Computing Topics
The Coverage of Knowledge Units within Information Technology Body of Knowledge

<table>
<thead>
<tr>
<th>Knowledge Unit</th>
<th>Topic</th>
<th>Lecture Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP.Professional Communications</td>
<td>Professional Communications</td>
<td>5</td>
</tr>
<tr>
<td>SP.Intellectual Property</td>
<td>Intellectual Properties</td>
<td>2</td>
</tr>
<tr>
<td>SP.Legal Issues in Computing</td>
<td>Legal Issues in Computing</td>
<td>2</td>
</tr>
<tr>
<td>SP.Professional and Ethical Issues &amp; Responsibilities</td>
<td>Professional and Ethical Issues &amp; Responsibilities</td>
<td>3</td>
</tr>
<tr>
<td>SP.Privacy and Civil Liberties</td>
<td>Privacy and Civil Liberties</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

Assessment Plan for the Course & how Data in the Course are used to assess Program Outcomes

Student and Instructor Course Outcome Surveys are administered at the conclusion of each offering, and are evaluated as described in the School’s Assessment Plan: https://abet.cs.fiu.edu/csassessment/