Social and Ethical Dimensions of Information and Communication Technology

ENCS 393/AA

Centre for Engineering in Society, Faculty of Engineering and Computer Science
Concordia University

Summer 2018
Mondays and Wednesdays 2:45-5:30
MB S1.401

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Prerequisites: ENCS 282; 40 credits in BCompSc program.
NOTE: Students who have received credit for ENCS 410 may not take this course for credit.

Information technology and society are rapidly transforming each other creating new ethical dilemmas that reshape computer science practice.

Course Description

In this course we will assess how information technology impacts society, and introduce pressing ethical questions concerning the use of computers. We will also explore how society shapes information technology, and what this means for the roles and responsibilities of computer scientists. The profound changes of the information age have a series of social, political, economic, legal, and ethical implications; these changes are both positive and negative because information technology both empowers people and exposes their vulnerabilities, changing our relations to others including family, the community, the state, corporations and ourselves. This course examines how we as a society, and you as computer scientists specifically, can evaluate these changes and steer information technology in ways that lead towards fair and just societal outcomes.

The course will cover topics including: ethics in an information society; computer mediated experience; information productivity and the work/life balance; economic globalization and intellectual property in a digital world: the digital divide; surveillance and privacy; electronic democracy; and, computer‐based profiling and hacking.

Course Objectives

- Develop an understanding of the place of information technology and computer science within broader social and historical contexts.
- Understand the dimensions of social and ethical computer science practice.
- Recognise, analyse, and evaluate the role that information technology and computers play in important contemporary issues, and the impact of information technology interventions in a global context.
- Promote ability to think critically, clearly and analytically.
- Improve skills learned in ENCS 282 Technical Communication, improve capacity for effective writing and public speaking.

Course Policies

- *Attendance* – Your presence in class is mandatory. We cover lots of material in class and for that reason it is critical that you attend in order to do well. Attendance also means refraining from playing with your cell phone, reading the newspaper, surfing the internet, using other electronic devices or doing other coursework while in the classroom. This course is designed for courteous, motivated students who attend each class, do all the reading, and ask questions when they don't understand something. If you miss class, you are responsible for getting materials we covered from a classmate.
- *Academic Integrity* – I expect that the work you complete for this course will be your own; cheating, plagiarism, and other forms of academic dishonesty will not be tolerated. Any written assignment that borrows from other sources without giving proper credit or that is plagiarized in whole or in part from another source (including other student's work) is grounds for an "F" on the assignment, or depending on the severity of the crime, is grounds for an "FNS" in the course. You must certify that you understand these requirements by completing the "Expectations of Originality Statement" at the beginning of the semester. Furthermore, on the cover sheet of every assignment you [or your group] must write the following: "I [We] certify that this submission is my [our] original work and meets the Faculty's Expectations of Originality" You must sign the statement, write the date and your I.D. number.

  Academic Integrity – The work students complete for this course will be their own, which is to say that cheating, plagiarism, and other forms of academic dishonesty will not be tolerated. Any written assignment that borrows from other sources without giving proper credit or that is plagiarized in whole or in part from another source (including other student's work) is grounds for an "F" on the assignment, or depending on the severity of the infraction, is grounds for an "F" in the course. Concordia University recognizes as a punishable offence "any form of cheating, plagiarism, personation, falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises" (Code of Academic Conduct, Section 16.3.14, Paragraph III). For questions about the University's policy on cheating and plagiarism, please consult the Undergraduate Calendar at http://registrar.concordia.ca/calendar/16/sec16.html

- *Late Assignments* – Late assignments will be penalized by 1/3 letter grade per day. For example, an assignment that would have been a B, would be a B- if it is one done day late, a C+ if it is two days late, and so on.
- *Special Accommodations* – Please inform the professor of any special needs or circumstances as soon as possible. Reasonable accommodations will be made for hospital emergencies, accident or death in the family.
- *Communication* – Please include "ENCS393" in the subject line of all emails to me about the class. I will try to respond as soon as I can, usually within 24 hours.
- *Academic Support* – Concordia offers a variety of support services for students, including tutoring and writing assistance. See http://learning.concordia.ca.

ASSIGNMENTS

1. Reflection Essays (20% of your grade): You will be expected to write **four** short reflection essays during the semester. These essays should be about 1-2 pages, double spaced. I will not be assigning any special topics for each essay, your duty will be to reflect on the readings in the last week or two and write an informed opinion about the readings. I DO NOT WANT A SUMMARY OF THE READINGS. I want to read your opinion about the readings and your reasons for arriving at that opinion. It will be helpful to focus on the key technological concept for each week's reading. (*See supplemental handout on reflection essays.*)

2. Reading Quizzes (10% of your grade): There will be **five** pop-quizzes throughout the semester. These quizzes will be unannounced and will take place at the beginning of five random classes. The quizzes will be testing you on your familiarity with the reading(s) assigned for that day. They will be very simple one or two question quizzes. These quizzes will be *very very* easy...if you have done the reading.

3. Quizzes (40% of your grade): There will be **two** in-class quizzes in the semester. These quizzes will try to test your grasp of key concepts, your ability to analyze and your familiarity with the readings and lectures. The second quiz will be cumulative.

4. Project (20% of your grade): There will be one project in this class. For this assignment, you will introduce a technology or incident that produces a social and ethical dilemma. You will then propose a re-conceptualization of the object of study, bringing it into compliance with ethical practice, reduce or remove the ethical harm, and generate more fair and just societal outcomes. The paper will be 1500 words in length (not including cover page and bibliography), and consist of introduction, identification of the social and ethical dilemma posed and damage created, description of the ethical principle and social danger at stake, and a detailed description of your proposed solution, in which you address the social and ethical concerns.

5. Class Engagement (10% of your grade): I will be gauging how well you participate in class discussions and your general level of interest in class. You will be graded based on your participation in class, your demonstrated interest in the subject and your regularity in attending class. If you choose to hide your face behind a laptop in class, or have not opened your mouth in class, or even do not come regularly to class you can be sure you are not getting a mark for this section.

I will use the following numerical base for your letter grade:

A+ (90-100%) Exceptional	A – (85-89%)	A- – (80-84%)
B+ – (77-79%)	B – (73-76%)	B- – (70-72%)
C+ – (67-69%)	C – (63-66%)	C- – (60-62%)
D+ – (57-59%)	D – (53-56%)	D- – (50-52%)
F <50% Fail	R <20% Repeat	NR Grade not Reported

Course Schedule

All readings will be posted on the Moodle.

1. Wednesday, May 2 — Introduction
Reading:

(1) Can We Define "Technology"?

2. Monday, May 7 — The Technology-Society Relationship
Reading:

(1) Peter J. Denning. (2005). The Profession of IT: Is Computer Science Science? *Communications of the ACM,* 48:4; 27-31.
(2) Leo Marx. (1987). Does Improved Technology Mean Progress. *Technology Review* 90; 33-41.

3. Wednesday, May 9 — Politics of Technology - Are ICTs neutral?
Reading:

(1) Langon Winner (1986). "Do Artifacts Have Politics?" *The Whale and the Reactor: A Search for Limits in an Age of High Technology.* Chicago: University of Chicago Press; 19-39.
(2) Langon Winner (1986). "Technologies as Forms of Life" *The Whale and the Reactor: A Search for Limits in an Age of High Technology.* Chicago: University of Chicago Press; 3-13.

4. Monday, May 14 — Social and Ethical Codes

Reading:

(1) James Moor, (1985). What is Computer Ethics? *Metaphilosophy*. Vol. 16, No. 4.Oct. 1985.

(2) Deborah Johnson, (2004). Computer Ethics, in A. Teich, ***Technology and the Future,*** Boston: Wadsworth. p. 283-296.

(3) REFLECTION ESSAY #1 DUE IN CLASS

5. Wednesday, May 16 — Equity, Gender, and Culture

Readings:

(1) Patrick Hopkins, "The Intersection of Culture, Gender, and Technology," D. Johnson and J. Wetmore (eds) *Technology and Society: Building Our Sociotechnical Future*. Cambridge, MA: The MIT Press, pp 195-203.

(2) Anna Vitores & Adriana Gil-Juarez, "The Trouble With 'Women in Computing': a Critical Examination of the Deployment of Research on the Gender Gap in computer Science." Journal of Gender Studies, Sept. 24, 2015. Pp. 1465-3869.

Monday, May 21 – University Closed

6. Wednesday, May 23 — Social Interaction

Reading:

(1) Sherry Turkle. (2011). ***Alone Together.*** New York: Basic Books (pp. 35-52).

(2) Joseph Pitt "Don't Talk to Me" From iPod and Philosophy. Dylan Wittkower. Open court. 2008.

(3) Malcolm Gladwell. (2010). Small Change. Retrieved Sept. 9, 2011 from www.gladwell.com.

REFLECTION ESSAY #2 DUE IN CLASS

7. Monday, May 28 — ***QUIZ 1***

9. Wednesday, May 30 — Artificial Intelligence and Identity

Reading:

(1) Vernor Vinge. (1993). The Coming Technological Singularity. Retrieved Sept. 9, 2011 from http://mindstalk.net/vinge/vinge-sing.html

(2) David Dickinson. Science and Its Publics. Social Studies of Science. 2000.

10. Monday, June 4 — Technology Assessment

Reading:

(1) S. Kline &D. Kash, "Do We Need a Technology Policy?" IEEE Technology & Society Magazine, Summer 1992, pp. 18-25.

(2) Josee Van Eijndhoven, "Technology Assessment: Product or Process." Technological Forecasting & Social Change, Vol 54, 269-286.

REFLECTION ESSAY #3 DUE IN CLASS

11. Wednesday, June 6 – Software Piracy

Reading:

(1) Michael Joseph Gross. (2012). World War 3.0. Retrieved Sept. 1, 2012 from http://www.vanityfair.com/culture/2012/05/internet-regulation-war-sopa-pipa-defconhacking

12. Monday, June 11 — ICTs and Globalization

(1) Simone Cecchini, "Tapping ICT to Reduce Poverty in Rural India." IEEE Technology & Society Magazine, Summer 2003, pp. 20-27

(2) Thomas Friedman, "It's a flat world after all." http://www.nytimes.com/2005/04/03/magazine/03DOMINANCE.html?pagewanted=1&sq=technology%20globalization&st=nyt&scp=7

(3) Byron Newberry, "Engineering Globalization," IEEE Technology & Society Magazine, Fall 2005, pp. 8-15.

REFLECTION ESSAY # 4 DUE IN CLASS

13. Wednesday June 13 — QUIZ 2

14. **Monday, June 18 -** PROJECTS DUE