

COURSE SYLLABUS

CMPT 408: ETHICS AND COMPUTER SCIENCE

Course Description:

The course addresses social, ethical, legal and managerial issues in the application of computer science to the information technology industry. Through seminars and case studies, human issues confronting computer science graduates will be addressed. Topics include managerial and personal ethics, computer security, privacy, software reliability, personal responsibility for the quality of work, intellectual property, environment and health concerns, and fairness in the workplace.

Prerequisite(s): Successful completion of 30 credit units in computer science, including at least 3 credit units at the 400-level of computer science.

Class Time & Location: Tuesday & Thursday, 11:30 am - 12:50 pm, Jan 5 - April 7, 2015, THORV S386

Instructor Information

Instructor: Julita Vassileva

Contact: Email: jiv@cs.usask.ca
Office Phone: 306-966-2073

Office Hours: Location: Thorv. 178.8
Hours: Tuesday (9 AM-10AM), but please schedule appointment by email

Course Objectives

As a result of taking this course, the students will develop:

- knowledge of different existing ethics frameworks and professional ethics standards for computer professionals,
- skills for ethical decision making using established methodology and process,
- wide knowledge of ethical issues related to computer and information technologies,
- argumentation and written communication skills.

Student Evaluation

Grading Scheme

- 1) **Topic presentations (15%):** The first lecture each week (60 min length) will be presented by one or two students, based on recommended readings – usually the corresponding Chapter from the textbook. The student lectures will take place on Tuesdays. Thursdays will be dedicated to class discussions related to the topic of the week.
- 2) **Collaborative essay assignments (20%):** There will be 6 collaborative essays about an assigned question related to the topic of the week. The approximate length expected is 500 words, or 1 page single-spaced using 12 pt font. The assignments will be completed in groups of 3-4 people using a Wiki system. They will be due on Saturday night.
- 3) **Class participation (5%):** Students are expected to engage in the class discussions and their participation will be graded at every class.
- 4) **Term Paper (20%):** Investigate a chosen topic (see [list of sample topics](#)). Use articles and/or books, etc., for background. Your project must include some background research and some activity, e.g., an interview or a physical site visit. (If you choose a topic for which you can't think of an appropriate activity, discuss it with the instructor.) Don't just report. Discuss pros and cons. Evaluate. Use your own words. Quote where appropriate. Give citations for facts and quotes. Discuss how your topic relates to material covered in the text and/or in class discussions. The paper should be approximately 4000 words. The term papers will be peer-reviewed and

then presented in front of the class. (The class presentation is worth 5% of the 20%). See Guidelines [here](#).

- 5) **Final Exam – 40%:** A quiz (not marked) with sample questions will be provided around mid-term break to get an idea what kind of questions will be on the exam.

Participation	5%
Topic Presentation	15%
Collaborative Assignments	20%
Term Paper	20%
Final Exam	40%
Total	100%

Criteria that must be met to Pass

It is required that the students attempt all the items in the grading scheme to pass this course. A student will be deemed to have incomplete failure (INF), if they default in any of the following criteria:

- miss more than 2 assignments,
- absent more than 50% of the classes
- miss the term paper
- miss the final exam

Final Exam Scheduling:

The Registrar schedules all final examinations, including deferred and supplemental examinations. Students are advised not to make travel arrangements for the exam period until the official exam schedule has been posted.

Note: All students must be properly registered in order to attend lectures and receive credit for this course.

Textbook Information

Required Text

- Sara Baase (2012) A Gift of Fire, Pearson Prentice Hall, Fourth Edition.
- Other required readings and resources for class activities, as well as the activities, scheduling and presentation notes will be available online on the Moodle course site. Any changes to the class contents, schedule, and announcement about readings will appear on this website.

Lecture Schedule

Jan 5-7	Course introduction, <i>Initial essay; Pick a topic for Lecture presentation before Jan 10</i>
Jan 10-12	Ethics, approaches, ethical decision making
Jan 17-19	Privacy, <i>Collaborative essay 1</i>
Jan 24-26	Freedom of speech, <i>Collaborative essay 2</i>
Jan 31-Feb 2	Intellectual property, <i>Pick a topic for term paper due Saturday, Jan 28</i>
Feb 7-9	Wiretapping and Encryption, <i>Collaborative essay 3</i>
Feb 14-16	Crime and security
Feb 21-23	<i>SPRING BREAK</i>
Feb 28-Mar 2	Behaviour change, Recommender Systems, Games and gamification, <i>Collaborative essay 4</i>
Mar 7-9	The Impact of IT on Work, <i>Collaborative essay 5</i>

Mar 14-16	Evaluating and controlling technology, <i>Collaborative essay 6</i>
Mar 21-23	Errors, failures and risks
Mar 28-30	Professional ethics and professionalism
Apr 4-6	Term paper presentations, <i>Term papers due on Friday, Apr 7</i>

Course Overview

1) Ethics, approaches, ethical decision making

- 2) **Privacy:** What is privacy, how new technologies lead to risks, expectation of privacy, video surveillance and face recognition, marketing and personalization, social and personal activity, location tracking, government systems; protecting privacy – terminology, rights and law, privacy regulations in Canada, and Europe
- 3) **Freedom of Speech:** Regulating Communication media, free speech principles, offensive speech, censorship laws, pornography, spam, anonymity, censorship and political freedom, net neutrality, market view.
- 4) **Intellectual Property:** Definitions, types – copyright, patent, trademark, fair use doctrine, challenges of new technologies, legislation – Bill C-11, educational use, digital locks, free software, patenting software
- 5) **Wiretapping and Encryption:** Wiretapping history, design of communication systems for interception, the NSA and Secret Intelligence Gathering, Snowden.
- 6) **Crime and Security:** Hacking, different kinds – hacktivists, security researchers, foreign spies, security, the law; Identity theft and credit Card fraud, Extraterritoriality – whose laws rule the web.
- 7) **Recommender Systems, Behaviour Change, Games and Gamification:** Recommender systems and Filter bubbles, How IT changes our behaviours, self-monitoring apps, Impact of games on new skills and socialization, Gamification and ethical issues of social engineering.
- 8) **Impact of IT on Work:** Job Destruction and Creation, The impact of AI on work, Changing skills and skill levels required for jobs, Telecommuting, Outsourcing and Global workforce. Employee recruitment and monitoring in the age of social media; Discrimination and stereotypes, Whistle blowing.
- 9) **Evaluating and Controlling Technology:** What is true on the web? Computer models – can we trust their predictions? Digital divide, trends in access to new technologies, growing vertical inequality and geographical equality, Neo-luddite views of computers, technology and quality of life vs Techno-optimist view, Predicting the future?
- 10) **Errors, failures and Risks:** Types of Computer Failures and examples: problems for individuals, system failures, safety critical systems, the Therac-25 case analysis, increasing reliability and safety – testing, standards, professional techniques; laws regulations, markets. Controlling IoT technologies. Are we too dependent on computers?
- 11) **Professional Ethics and Responsibilities:** Definition of Professional Ethics, Guidelines for Computer Professionals, Professional codes of ethics (IEEE and ACM, CIPS). Ethical decision making scenarios – methodology and cases.

Policies

Recording of Lectures

To facilitate safe space for discussion and collaboration, the instructor will not record our classes without prior notice. Students should also refrain from audio or video recordings of class unless advance permission is granted by the instructor.

Late Assignments

Since the assignments are collaborative, late submission is not accepted unless the student has a medical or other serious reason for not being able to participate. In this case, this missed assignment will not be counted towards the final grade for this student. The student should contact the instructor and provide documentation to justify the reason for missing the assignment.

Missed Assignments

A missed assignment without a prior permission or an alternate arrangement by the instructor will be graded zero and will count against the student's passing criteria. Students should contact the instructor with the proper documentation to support their reason, at least 24 hours before the assignment deadline, in case they are going to miss the deadline. It is left to the instructor to determine if the reason given by the student is compelling.

Missed Examinations

1. Students who miss an exam should contact the instructor as soon as possible. If it is known in advance that an exam will be missed, the instructor should be contacted before the exam.
2. "A student who is absent from a final examination due to medical, compassionate, or other valid reasons, may apply to the College of Arts and Science Undergraduate Student's Office for a **deferred** exam. **Application must be made within three business days of the missed examination** and be accompanied by supporting documents." (<http://artsandscience.usask.ca/students/help/success.php>)

Incomplete Course Work and Final Grades

"When a student has not completed the required course work, which includes any assignment or examination including the final examination, by the time of submission of the final grades, they may be granted an extension to permit completion of an assignment, or granted a deferred examination in the case of absence from a final examination, if the reasons for their missed assignments / examination are compelling.

Extensions past the final examination date for the completion of assignments must be approved by the Department Head, or Dean in non-departmentalized Colleges, and may exceed thirty days only in unusual circumstances. The student must apply to the instructor for such an extension and furnish satisfactory reasons for the deficiency. Deferred final examinations are granted as per College policy.

In the interim, the instructor will submit a computed percentile grade for the class which factors in the incomplete coursework as a zero, along with a grade comment of INF (Incomplete Failure) if a failing grade.

In the case where the student has a passing percentile grade but the instructor has indicated in the course outline that failure to complete the required coursework will result in failure in the course, a final grade of 49% will be submitted along with a grade comment of INF (Incomplete Failure).

If an extension is granted and the required assignment is submitted within the allotted time, or if a deferred examination is granted and written in the case of absence from the final examination, the instructor will submit a revised assigned final percentage grade. The grade change will replace the previous grade and any grade comment of INF (Incomplete Failure) will be removed.

A student can pass a course on the basis of work completed in the course provided that any incomplete course work has not been deemed mandatory by the instructor in the course outline and/or by College regulations for achieving a passing grade." (<http://policies.usask.ca/policies/academic-affairs/academic-courses.php>)

For policies governing examinations and grading, students are referred to the Assessment of Students section

of the University policy “Academic courses: class delivery, examinations, and assessment of student learning” (<http://policies.usask.ca/policies/academic-affairs/academic-courses.php>)

Academic Honesty

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (<http://www.usask.ca/secretariat/student-conduct-appeals/StudentAcademicMisconduct.pdf>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf>) Academic honesty is also defined and described in the Department of Computer Science Statement on Academic Honesty (<http://www.cs.usask.ca/undergrad/honesty.php>).

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at:

<http://www.usask.ca/secretariat/student-conduct-appeals/forms/IntegrityDefined.pdf>

Examinations with Disability Services for Students (DSS)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check <http://students.usask.ca/health/centres/disability-services-for-students.php>, or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for the final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.