CMPT 470 — 3(0-3-0)

PERSPECTIVES IN COMPUTING SCIENCE

Winter 2018

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Class Times:	Seminar	Monday	N206 13:00–13:50,
		Wednesday	N206 13:00 – 13:50
		Friday	N206 13:00–13:50

I. Calendar Description

2017-18, Winter 3(0-3-0)

A senior level seminar course dealing with special topics in computing. Particular attention will be paid to computer applications, social impacts, ethical and legal issues, worldview perspectives and potential future developments in computing.

Prerequisites: Twelve credits in computing science at the 300-level and consent of instructor

II. Objectives

This course is intended to reflect back on the discipline of computing science using a Christian world view. By the end of this course students will have been exposed to aspects of the course that develops the student in the following ways:

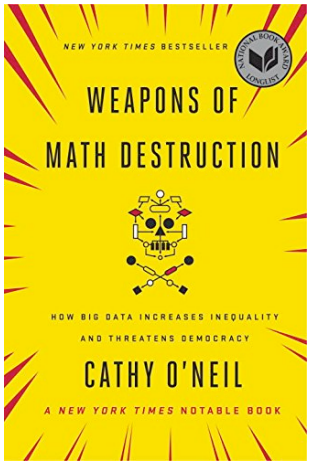
- Consider the role of technology in society and individual lives
- More fully understand the interaction of technology and the Christian life
- Have a broader perspective on the discipline of computing science
- Discuss and present viewpoints on computing science and technology

III. Course Conduct

The course consists of three hours of seminars per week. During this time students are expected to contribute to discussions led by departmental faculty members, other students in the course, and invited guests. It is expected that students will behave in an honest and forthright manner in all their activities. Students should be courteous and helpful to one another. Discussion during this course is strongly encouraged; however, students are expected to complete their own work.

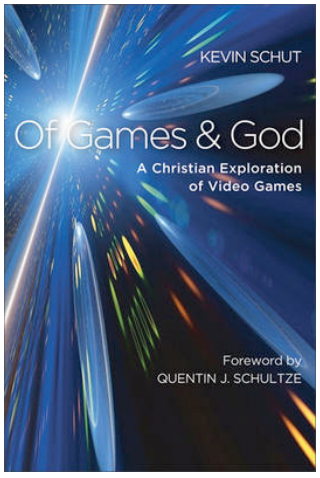
IV. Text(s) and Other Resources

Text:

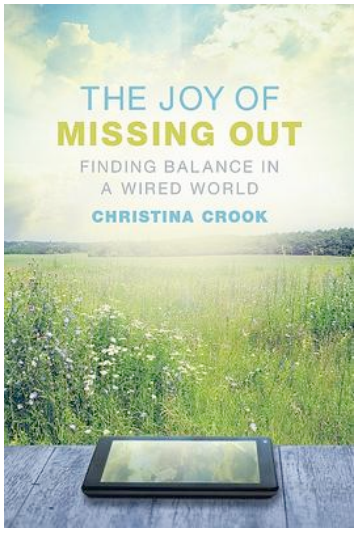


O'Neil, Cathy (2016), *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy.* Crown

Schuurman, Derek C. (2013), *Shaping a Digital World: Faith, Culture and Computer Technology.* IVP Academic



Schut, Kevin. (2013), *Of Games and God: A Christian Exploration of Video Games.* Brazos Press



Crook, Christina. (2015), *The Joy of Missing Out: Finding Balance in a Wired World.* New Society Publishers.

It is required that students have a copies of one of these texts available, read the book according to the reading schedule, and be prepared to discuss these books. The books are available in print, and as e-books. Students may decide which format of the book they prefer.
The Joy Of Missing Out has a sample chapter at: http://www.jomobook.com/media/

Additional Resources:

Knuth, Donald E. (2001), *Things a Computer Scientist Rarely Talks About.* Center for the Study of Language and Information.

Ermann, M. David (2003), *Computers, ethics, and Society.* Oxford University Press

Kling, Rob (1996), *Computerization and Controversy: Value Conflicts and Social Choices.* Academic Press Inc.

ACM SIGCAS Computers and Society. ACM Digital Library

Moodle: http://moodle.kingsu.ca

V. Grade Distribution

The relative weighting of each of the evaluation components of the course are:

Contribution to Seminar Discussions	20%
Chapters Reports	20%
Seminar Presentations	20%
Activities	20%
Final Essay	20%
Total	100%

VI. Description of Assignments

A. Seminar Discussion

It is expected every student will participate in and contribute to seminar discussions. Contributions involve not merely talking but furthering the discussion. There will be three types of discussions:

- Chapter discussions from the text book
- Discussion with invited guests
- Student led Discussions

It is expected that students will arrive on time to all seminars.

B. Chapters Report and Presentation

Each book will be divided in to three parts, such that a student eventually reads an entire book. At the start of the each discussion associated with the student's book, the student is expected to hand in a brief report (approximately two or three pages). Students should organize their report using the following headings.

- Briefly summarize the chapters
- Mention points you agree with and why
- Mention points you disagree with and why
- Provide an overall opinion or impression of the chapters
- List two questions to ask the class that is not suitably answered with a yes or no answer

Reports should be in a **plain text format** and uploaded to the Moodle class site. Reports are due by 9 a.m. on the day of the Chapters discussion. Students are expected to briefly introduce the content of the chapters to their fellow classmates, and help lead a discussion.

C. Seminar Presentations

Students are expected to lead two discussions during the course. Each discussion should consist of an approximately ten minute introduction to a topic, followed by a fifteen-minute discussion. The day before the discussion the student should submit a page including the title and reference of the talk and three questions that can be used to promote discussion.

One talk should be based on a historical topic in computing science and technology. The other talk should be based on a contemporary issue. For topics for historical talks see the references *Computers, ethics, and Society*, *Computerization and Controversy,* or the IEEE Ethics book. All three are placed on reserve in the library. For contemporary topics please see the ACM SIGCAS publications.

Leading a good discussion is a skill. Your questions are designed to help you should the discussion falter. Hence a good discussion question should not have a one word, or short phrase answer.

Examples of bad questions:

- When was Donald Knuth born?
- Do you agree that computers form an important part of society?

Examples of good questions:

- What is the importance of the Intel 4004 central processing unit on the course of recent human history?
- How has the miniaturization of computing components changed society?

D. Minor Activities

There are minor activities during this course, some times in place of a guest lecture slot or unfilled student presentation slot. Combined these are worth 5% of a student's final mark. If you are in doubt as to the requirements of an assignment please get clarification from an instructor. Two example minor activities are listed below.

- List three priorities in your life that you consider extremely important (eg. God, Family, Education, Finances, etc.) Consider a future technology purchase and comment how such a purchase would help or hinder improvements in these three priorities.

- Consider learning objectives for the computing science program and examine how each class you have taken contributes towards these objectives. This may take place over multiple classes and further instructions will be given in class.

E. Major Activities

There are two major activities during this course worth 10% and 5% respectively as listed below. If you are in doubt as to the requirements of an assignment please get clarification from an instructor.

- Take four days of technology holiday. On these days you will make no use of cell phones, computers, television, or other modern digital conveniences. Two exceptions are an alarm clock to wake you, and a video projector if your church makes use of Power Point. Note that the four days need not be consecutive, but each day must consist of a consecutive 24h period. After each day you should

make notes on expected and unexpected things you notice (eg: how many times did you reach for a cell phone that wasn't there). If you decide part way through a 24h period to end the technology holiday then you must start that day over. That is, you may not have two 12h days add up to one full day. The intention of this exercise is to help you realize where you have become dependent on digital technologies, and how they affect the way you think and act. After all four holiday days write a brief report incorporating your notes. You may note that some students have actually enjoyed this activity, although enjoyment is not required to benefit from this activity ☺.

- Have three communications with people that have a similar status in your life. For example, you may select three friends, three aunts, or three grandparents. For one have a face-to-face conversation. For another send a hand written letter. For the third send an email. Write a brief reflection on the three "conversations" that highlights the differences in how personal each method of communication is. That is, can you significantly incorporate what make you uniquely you into an email as compared to a face-to-face conversion or a written letter? If you are unable to have a face-to-face conversation you may have a phone conversation instead but you must include a justification as to why you selected this option.

F. Final Essay

Write an essay on the topic of the place of technology in your life, reflecting on the course texts and course activities. Where do you feel technology has appropriately improved your life, and where do you feel the use of technology should be more carefully considered? Your essay should be approximately six to twelve pages. The exact page length should not be the emphasis of the essay, rather you should have enough text to demonstrate a well thought out reflection. Incorporate your world viewpoint. Emphasize points where your opinion has changed during this course. You are also encouraged to include points that may disagree with opinions expressed in the text or discussions, but remember to include supporting reasoning and examples with these disagreements. The point of this essay is not to make sure you think the way an author or instructor thinks, but to provide you with an opportunity to demonstrate thoughtful reflection on the appropriate use of technology. If you are a Christian you should include discussion concerning biblical and Christian adherence in the use of technology. If you are not a Christian you should provide evidence that your use of technology is consistent with your worldview.

Your essay should be well written, demonstrating your ability to communicate ideas and opinions clearly. Include a **thesis statement** in your essay that is strongly supported throughout the essay. Do not merely ramble while trying to fill up space. To assist you with your writing there may be a peer review session of your essay in the week before the final due date. Keep this in mind, and thus do not include things in your paper of a confidential nature.

VII.Tentative Topics

From books:

- Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy
- Shaping a Digital World: Faith, Culture and Computer Technology.
- Of Games and God: A Christian Exploration of Video Games.
- The Joy of Missing Out: Finding Balance in a Wired World.

From invited guests:

Each guest has been asked to give a twenty minute discussion to introduce students to a topic, and lead a thirty minute discussion. Each guest is asked to discuss a topic that intersects computer science or technology and their areas of expertise.
Please note that the guests and schedule are subject to change. Guests will typically be invited on Wednesdays, but could be moved to a Monday or Friday to accommodate the schedule of guests.

From student discussions: As selected by students

VIII. Other information

Students are responsible for conducting themselves in accordance with the college regulations in the Academic Policy Handbook. Specific attention should be paid to the Scholarly Ethics and Academic Honesty policy, as outlined within the academic calendar.

CMPT 470: Perspectives in Computing Science, Winter 2018 (tentative)

January 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2	3	4	5 (MJ) Intro	6
7	8 (MJ) Library	9	10 (MJ) Neil DeRoo	11	12 (AT) Student 1	13
14	15 (AF) Crook 1	16	17 (AT) Student 2	18	19 (AF) Joanne Moyer	20
21	22 (MJ) Schuurman 1	23	24 I.S. Conference		26 (AT) Student 3	27
28	29 (AF) O'Neil 1 Due: Tech Purchase	30	31 (MJ) Gordon Preston	1	2 (AT) Student 4	3

February 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4	5 (MJ) Schut 1	6	7 (AF) David Long	8	9 (AT) Student 5	10
11	12 (AF) Crook 2	13	14 (AF) Guest 5	15	16 (AT) Student 6	17
18	19 Reading Week					24
25	26 (MJ) Schuurman 2 Due: Tech Holiday	27	28 (MJ) Zack Berg	1	2 (AT) Student 7	3

March 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4	5 (AF) O'Neil 2	6	7 (AT) In-class	8	9 (AT) Student 8	10
11	12 (MJ) Schut 2	13	14 (AT) In-class	15	16 (AT) Student 9	17
18	19 (AF) Crook 3	20	21 (AF) Darcy Visscher	22	23 (AT) Student 10	24
25	26 (MJ) Schuurman 3	27	28 (AT) Student 11	29	30 Good Friday	31

April 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 Easter Monday	3	4 (AF) O'Neil 3	5	6 (AT) Student 12 Due: Conversations	7
8	9 (MJ) Schut 3	10	11 (AF) Essay Review	12	13 (AT) Student 13	14
15	16 (AT) Wrap-up Due: Essays	17	18	19 ... Exams ...		
22	23 ... Exams ...				27	28