

Planet Google: Big Data and the Information Society

MIT 2157B

The University of Western Ontario

Faculty of Information & Media Studies

Winter 2020

Lectures: Tuesdays 9:30-11:30 & Thursdays 9:30-10:30 in NCB 114

COURSE INSTRUCTOR:

Zak Bronson

Office Hours: Thursdays, 10:30am-12:00 in FNB 4018

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COURSE DESCRIPTION:

Discover how access to and control of behind-the-scenes information is a major force in our lives. This course explores how search engines harvest “big” data from users and use it to map, analyze, and exploit patterns of online behaviour for marketing, government and corporate intelligence, and other purposes.

By taking this course, students will:

- Comprehend the theoretical principles that underlie key concepts of large-scale data systems, including algorithms, predictive analytics, linked data, and metadata
- Recognize key continuities and differences between the various paradigms of data that prevail in modern technological discourse, and place these paradigms in an historical and social context
- Critically engage with statements in the popular and professional media related to big data, and in so doing distinguish fact from fiction, and truth from hype
- Communicate both their understanding and their critical engagement to organizations and individuals that would benefit from this knowledge, and be in a position to reward from it

REQUIRED COURSE READINGS:

Cathy O’Neil, *Weapons of Math Destruction*. New York: Broadway, 2016. [available at UWO bookstore]

All other course readings and additional materials will be available through the course OWL page.

COURSE EVALUATION:

1. Midterm Exam = 25% (in class Feb. 11th)
2. Written Reflection Paper = 25% (4-5 pages; due in class April 2nd)
3. Final Exam = 35%
4. In-class Participation = 15% (ongoing)

COURSE ASSIGNMENT DESCRIPTIONS:

1. **Midterm Exam – 25% (in-class Tuesday, Feb. 11th):** During Week 6, students will write a 2-hour in-class midterm on the course readings and lecture materials. The exam will cover the course material from Weeks 1-5 and will likely feature multiple choice, short answer, definition, and long answer questions. More information on the exam format will be provided in class prior to the midterm date.
2. **Final Exam – 35%:** The final exam is comprehensive, but it will be weighted towards the material from the second half of the course. In addition to multiple choice, short answer, and short essay questions, the final exam will also feature a longer essay response based on the course content.
3. **Written Reflection Paper – 25% (due in-class Thursday, April 2nd):** For this assignment, students will be asked to examine their digital footprint through online profiles such as Facebook, Twitter, Google, and LinkedIn. Based on this information, students will be asked to write a **4-5-page** reflection paper that responds to a series of outlined questions. Details on the specific guidelines of the assignment will be provided in class.
4. **In-Class Participation – 15% (ongoing):** Participation and discussion are an essential element of the learning process, and students will be provided with many opportunities to contribute their thoughts and opinions in lecture, group activities, and class discussion facilitations. Students will be graded on the strength and quality of their in-class contributions.

COURSE OBJECTIVES:

- a) To gain an understanding of large-scale data systems in their practical, theoretical, historical, social and cultural contexts (MIT Objective 1)
- b) To gain an understanding of the processes and institutions involved in disseminating information, entertainment, and knowledge through big data technologies and services (MIT Objective 6)
- c) To explore the connections between the control of big data technologies and democracy, the public sphere, capital accumulation, labour and occupations, and the environment (MIT Objective 6).

COURSE POLICIES:

Email: Before you email me, please check the course syllabus for the answer to your questions. In general, I will attempt to check my email at least once a day, however, please note that responses often take 24-36 hours for a response. I also ask that students who have more in-depth questions come to visit me during my office hours.

Late Policy: All assignments are due at the start of class on the assigned date. Late assignments will be deducted 5% per day, unless the student has documented medical or family emergency. Late essays must be submitted via the FIMS dropbox outside the FIMS Dean's Office (FNB

2050). Essays will be date stamped; if they are received after 4:30 pm on Friday they will be stamped with Monday's date.

Use of Electronic Devices: Laptops are allowed for note-taking and in-class research. If a student is found using laptops for non-course work or is being generally disruptive to the class, I reserve the right to have their use banned. All cell phones must be put away during class time. Students may be asked to put away their laptops at certain times in the class, such as seminar discussions.

Attendance: Since much of your participation grade is dedicated to your seminar discussions, group activities, and in-class contributions, it is necessary to attend course lectures and to regularly contribute to receive a strong participation grade.

Readings: Make sure that you have completed the readings before class. Keep in mind that class discussions depend on your participation and contribution, so closely read the assigned articles and be prepared to discuss them in class.

Grading: Students will receive graded work worth no less than 15% at least 3 days prior to the deadline for withdrawal without academic penalty. This year, the date by which students are to have received at least 15% of their grade in a first semester course is March 4th, 2020. Students can find details about this academic policy here:

http://www.uwo.ca/univsec/pdf/academic_policies/exam/evaluation_undergrad.pdf. Please note, students are responsible for ensuring that they are aware of the grades they have received in their courses.

Statement on Academic Offences: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_grad.pdf

Student Health and Wellness: As part of a successful student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your degree. Information regarding health- and wellness-related services available to students may be found here at <http://www.health.uwo.ca>. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html.

Land Acknowledgement: Western University is situated on the traditional territories of the Anishinaabeg, Haudenosaunee, Lunaapeewak and Attawandaron peoples who have longstanding relationships to the land and region of southwestern Ontario and the City of London. The local First Nation communities of this area include Chippewas of the Thames First Nation, Oneida Nation of the Thames, and Munsee Delaware Nation. In the region, there are eleven First Nation communities and a growing Indigenous urban population. Western values the significant historical and contemporary contributions of local and regional First Nations and all of the Original peoples of Turtle Island (North America).

CLASS SCHEDULE:

WEEK 1—Jan. 7 & 9—WELCOME TO PLANET GOOGLE

Reading: Cathy O’Neil, *WMD* “Introduction”

& Oscar Schwartz, “Don’t Look Now: Why You Should be Worried About Machines Reading Your Emotions.” *The Guardian*. Retrieved from:
<https://www.theguardian.com/technology/2019/mar/06/facial-recognition-software-emotional-science>

WEEK 2—Jan 14 & 16—GOOGLE 1: THE SEARCH ENGINE

Readings: Siva Vaidhyanathan, *The Googlization of Everything*, pp. 51-64 [OWL]

& Danny Sullivan, “10 Big Changes with Search Engines Over My 20 Years of Covering Them.” Retrieved from: <https://searchengineland.com/10-big-changes-search-20-years-covering-246421>

WEEK 3—Jan. 21 & 23—GOOGLE 2: ADVERTISING AND BIAS

Readings: Siva Vaidhyanathan, *The Googlization of Everything*, pp. 64-81. [OWL]

& Safiya Noble, “Google Has a Striking History of Bias Against Black Girls,” *TIME*. Retrieved from: <https://time.com/5209144/google-search-engine-algorithm-bias-racism/>

WEEK 4—Jan. 28 & 30—UNDERSTANDING ALGORITHMS

Readings: O’Neil *WMD* – Ch. 1 & 2

& Tanvi Misra, “When Welfare Decisions Are Left to Algorithms.” *The Atlantic*. Retrieved from <https://www.theatlantic.com/business/archive/2018/02/virginia-eubanks-automating-inequality/553460/>

WEEK 5—Feb. 4 & 6—ACCESS: RECOMMENDER SYSTEMS

Readings: O’Neil *WMD* – Ch. 3 “Arms Race”

& Kevin Kelly, “Accessing” in *The Inevitable: Understanding the 12 Technological Forces that Will Shape Our Future*. [OWL]

WEEK 6—Feb. 11 & 13—MIDTERM EXAM

Feb. 11: **midterm exam** (2 hours)

Feb. 13: **Guest Speaker:** Dr. Eugenia Canas on Health Information Collection

WEEK 7—Feb. 18 & 20—*READING WEEK*****

WEEK 8—Feb. 25 & 27— BIG DATA & YOU

Readings: & O’Neil *WMD* – Ch. 4 “Propaganda Machine”

& John Cheney-Lippold. “A New Algorithmic Identity: Soft Biopolitics and the Modulation of Control.” *Theory, Culture & Society* 28 (6): 164-181. [OWL]

& Caitlin Dewey. “98 personal data points that Facebook uses to target ads to you.” *The Washington Post*. Retrieved from:

<https://www.washingtonpost.com/news/theintersect/wp/2016/08/19/98-personal-data-points-that-facebook-uses-to-target-ads-to-you>

WEEK 9—March 3 & 5—PREDICTIVE ANALYTICS: BUSINESS & POLITICS

Readings: O’Neil *WMD* – Ch. 5 “Civilian Casualties”

& Michal Kosinski, David Stillwell, & Thore Graepel, “Private Traits and Attributes are Predictable from Digital Records of Human Behavior. *Proceedings of the National Academy of Sciences*, 110.15 (2013): 5802–5805. [OWL]

Suggested: *Reply All* podcast “The Crime Machine Part 1 & 2” [OWL]

WEEK 10—March 10 & 12—FROM BIG BROTHER TO BIG DATA: SURVEILLANCE & DATAVEILLANCE

Readings: Readings: O’Neil *WMD* – Ch. 8 & 9

Watch: *The Circle* [OWL] *watch outside of class

WEEK 11—March 17 & 19— FAKE NEWS & BIG DATA POLITICS

Readings: O’Neil *WMD* – Ch. 10

& Siva Vaidhyanathan, “The Disinformation Machine,” in *Antisocial Media* [OWL]

Watch: *The Great Hack* [OWL] *watch outside of class

WEEK 12—March 24 & 26— WORK & LABOUR IN THE ERA OF BIG DATA

Readings: & O’Neil *WMD* – Ch. 6 & 7

& Adrian Chen, “The Laborers Who Keep Dick Pics and Beheadings Out of Your Facebook Feed. *Wired*. Retrieved from <https://www.wired.com/2014/10/content-moderation/>

WEEK 13—March 31 & April 2—*DELETE YOUR ACCOUNT!* OVERSIGHT & RESISTANCE

Readings: O'Neil *WMD* – Conclusion & Afterword

Due: Written Reflection Paper on April 2nd (in class)