

Emory University
Department of Quantitative Theory & Methods

QTM 490 (Spring 2020)
Advanced Seminar: Feminist Data Science
T/Th 10:00-11:15am, Callaway S103

Professor: Lauren Klein (lauren.klein@emory.edu)
Office Hours: Tuesdays 11:30-12:30pm, Thursdays 2:15-3:15pm, Callaway N310

Course Description

Feminism isn't only about women, nor is feminism only for women. Feminism is about power—about who has it and who doesn't. And in today's world, data is power too. As twenty-first century citizens, we have witnessed the power of data to create communities, advance research, and expose injustice. But we have also seen the power of data be used to discriminate, police, and surveil. This course will draw on the past several decades of intersectional feminist theory and activism in order to identify models for challenging differentials of power in data science, as well as methods of using data science to work towards justice. Class meetings will be split between discussions of theoretical readings and explorations of quantitative methods. Over the course of the semester, students will develop original research projects that intervene in issues of inequality and injustice. They will also produce final papers that document the results of their research. Participating students should have some familiarity with Python or a willingness to learn via additional online tutorials.

Required Course Materials

All required readings are available online as links in this document and/or posted on Canvas.

List of Graded Assignments

Your grade for the course will be calculated as follows:

- Reading Assignments, Class Participation, and Canvas Discussions: 10%
- 9 homework assignments: 50%
- Final project: 40%

Description of Graded Assignments

Reading Assignments

You will be reading a wide range of texts—some written clearly, some more dense; some short, some long. Because these texts will inform our classroom discussions—and what you, in particular, have to contribute—it is absolutely essential that you stay on top of the reading assignments and complete them before the start of each class. Reading assignments are assessed through classroom participation, as well as the occasional quiz.

Canvas Discussions

In effort to stimulate classroom discussion, as well as to allow you to introduce new material into the course, we will be using the Canvas "Discussion" feature throughout the course. During the second week of the course, you will select two weeks during which you will be required to find and share at least one relevant data science project (broadly conceived) that relates to the

course topics, and are responsible for providing a short (i.e. 250 word) description of the project on Canvas, highlighting what makes it relevant to the course. Due by midnight on the night BEFORE the class meets.

You will receive a whole letter grade (A, B, C, D, F) on the basis of your contribution. Students seeking additional feedback on their post should schedule a meeting with the professor during office hours.

Homework Assignments

Over the course of the semester, you will be completing ten small assignments, many involving writing (as per the “W” designation of the course). The first four are designed to encourage you to explore, apply, and/or extend the concepts discussed in the course readings, and must be submitted individually. The last five are designed to lead up to the final project, and may be submitted in your project group. All assignments must be submitted via Canvas by the beginning of class. You will receive a whole letter grade (A, B, C, D, F) on the basis of your contribution. Several of the final project preparation assignments will receive written feedback as well.

Final Project

In addition to the assignments described above, you will be completing a final project: a fully-developed data science project that applies the ideas discussed in the course to a research question of your own devising. You will be required to present your project to the class and submit a research paper that documents your work. You may work alone or in groups of two or three. You will receive a letter grade (A-F) on the basis of your contribution, as well as written feedback.

Additional information about the final project will be distributed throughout the semester.

Attendance, Punctuality, and Late/Skipped Assignments

You are allowed three excused absences, no questions asked. However, you are responsible for finding out what was discussed in the course on any days that you miss; I do not provide copies of lecture notes, but Jupyter notebooks will be made available on GitHub after each course meeting.

Beginning with the fourth absence, your overall course grade will be lowered by a half letter grade (e.g. B to B-) for each unexcused absence.

Please be respectful to your fellow students and arrive on time. If you arrive more than 15 minutes late, you will be considered absent for that class. If you absolutely must miss a class meeting, please contact me at least 24 hours in advance in order to make alternate arrangements.

All assignments are mandatory. Should you submit an assignment after the due date, your grade for that assignment will decrease by a half letter grade for each day that it is late (e.g. B

becomes B-). Should you fail to submit an assignment entirely, you will receive an F on that assignment and consequently, a lower grade for the course. Should you need an extension, please contact me *in advance* to discuss your situation.

Final Project Grading

This chart of grading characteristics, adapted from criteria developed by Professor Mark Sample of Davidson College, describes the general rubric I employ when evaluating project-based work:

GRADE	CHARACTERISTICS
A	Exceptional. The work is focused and its methods are sound. It clearly conveys the rationale behind its methodological choices as well as the stakes of its research question. The work demonstrates awareness of its implications and/or limitations, and it incorporates outside research when appropriate. The work reflects <i>in-depth</i> engagement with the topic.
B	Satisfactory. The work is reasonably focused and its methods are sound. It conveys the rationale behind its methodological choices as well as the stakes of its research question, but they are not fully developed. The work demonstrates some awareness of its implications and/or limitations. Fewer connections are made to outside research. The work reflects <i>moderate</i> engagement with the topic.
C	Underdeveloped. The work is mostly description or summary, without a consideration of the stakes of the research question. It does not consider the implications and/or limitations of the argument or methods, and few to no connections are made to outside research. The work reflects <i>passing</i> engagement with the topic.
D	Limited. The work is unfocused or incomplete, and displays <i>no evidence of student engagement</i> with the topic.
F	No Credit. The work is missing or consists of one or two disconnected paragraphs/charts/etc.

Office of Accessibility Services

Office of Accessibility Services works with students who have disabilities to provide reasonable accommodations. In order to receive consideration for reasonable accommodations, you must contact OAS. It is the responsibility of the student to register with OAS. Please note that accommodations are not retroactive and that disability accommodations are not provided until

an accommodation letter has been processed. Students registered with OAS who have a letter outlining their academic accommodations, are strongly encouraged to coordinate a meeting time with your professor that will be best for both to discuss a protocol to implement the accommodations as needed throughout the semester. This meeting should occur as early in the semester as possible. Students must renew their accommodation letter every semester they attend classes. Contact the Office of Accessibility Services for more information at (404) 727-9877 or accessibility@emory.edu. Additional information is available at the OAS website at <http://equityandinclusion.emory.edu/access/students/index.html>.

Writing Center and ESL Program

Tutors in the Emory Writing Center and the ESL Program are available to support Emory College students as they work on any type of writing assignment, at any stage of the composing process. Tutors can assist with a range of projects, from traditional papers and presentations to websites and other multimedia projects. Writing Center and ESL tutors take a similar approach as they work with students on concerns including idea development, structure, use of sources, grammar, and word choice. They do not proofread for students. Instead, they discuss strategies and resources students can use as they write, revise, and edit their own work. Students who are non-native speakers of English are welcome to visit either the Writing Center tutors or the ESL tutors. All other students in the college should see Writing Center tutors. Learn more and make an appointment by visiting the websites of the ESL Program and the Writing Center. Please review tutoring policies before your visit.

Honor Code

The Honor Code applies to all work submitted for courses in Emory College. Students who violate the Honor Code may be subject to a written mark on their record, failure of the course, suspension, permanent exclusion, or a combination of these and other sanctions. The Honor Code may be reviewed online at: <http://catalog.college.emory.edu/academic/policies-regulations/honor-code.html>.

If you are unsure as to what constitutes plagiarism, please contact me before submitting your assignment.

Class-by-Class Schedule

Class schedule subject to change.

Please consult Canvas for the most current class schedule.

Introduction and Overview

Jan 14 – Course overview

Jan 16 – Some current examples

HW 0 DUE: Install Anaconda; Intro to Jupyter and Python exercises

In class: *job applicant screening exercise*

Unit 1: Data, Feminism, and Power

Jan 21 – Feminism

Read: D'Ignazio and Klein, *Data Feminism*, introduction (pp. 1-20); [Combahee River Collective Statement](#); Cathy O'Neil, "Civilian Casualties" (Canvas)

Jan 23 – Feminism

HW 1 DUE: Positionality Statement

In class: *intersectional survival analysis exercise*

Jan 28 – Power

Read: D'Ignazio and Klein, *Data Feminism*, ch 1 (pp. 21-48); Joy Buolamwini and Timnit Gebru, "[Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification](#)"; Ishan Misra et al., "[Seeing through the Human Reporting Bias](#)"

Jan 30 – Power

Read: D'Ignazio and Klein, *Data Feminism*, ch 2 (pp. 49-72); Julia Angwin et al., "[Machine Bias](#)," Ben Green and Yiling Chen, "[Disparate Interactions: An Algorithm-in-the-Loop Analysis of Fairness in Risk Assessments](#)"

Feb 4 – Power

HW 2 DUE: On Discriminatory AI

In class: *replication of COMPAS audit*

Feb 6 – Power

HW 3 DUE: On "Missing Data"

In class: *counterdata collection exercise* (led Ezra Goss, Georgia Tech)

Feb 11 – Intro of final project

Read: Ruha Benjamin, "Retooling Solidarity, Reimagining Justice" (Canvas)

In class: *final project brainstorm*

Unit 2: Concepts, Models, and Methods

Feb 13 – Emotion and embodiment

Read: D'Ignazio and Klein, *Data Feminism*, ch 3 (pp. 73-96); Donna Haraway, "Situated Knowledges: The Science Question and the Privilege of Partial Perspective" (Canvas); Jessica Hullman and Nicholas Diakopoulos, "Visualization Rhetoric: Framing Effects in Narrative Visualization" (Canvas)

Feb 18 – Emotion and embodiment

In class: *data visceralization exercise* (led by Sarah Schoemann, Georgia Tech)

Feb 20 – No class meeting. Dr. Klein at UCLA.

HW 4 DUE: Final project proposal

Feb 25 – Binaries and Hierarchies

Read: D'Ignazio and Klein, *Data Feminism*, ch 4 (pp. 97-124); Sasha Costanza-Chock, "[Design Justice, AI, and Escape from the Matrix of Domination](#)," Mar Hicks, "Hacking the Cis-Tem" (Canvas)

Feb 27 – Binaries and Hierarchies

In class: *categories of data collection exercise*

Mar 3 – Pluralism

Read: D'Ignazio and Klein, *Data Feminism*, ch 5 (pp. 125-148); Anti-Eviction Mapping Project, "[\(Dis\)loctation/Black Exodus](#)"; Matthew Desmond and Carl Gershenson, "[Who gets evicted? Assessing individual, neighborhood, and network factors](#)"

Mar 5 – Pluralism

HW 5 DUE: Final project dataset

In class: *data-listening exercise (details TBD)*

[EMORY SPRING BREAK]**Unit 3: Practices, Praxes, Futures**

Mar 17 – Context

Read: D'Ignazio and Klein, *Data Feminism*, ch 6 (pp. 149-172); Nikhil Garg et al, "[Word Embeddings Quantify 100 Years of Gender and Ethnic Stereotypes](#)"; Philipp Blandfort et al, "[Multimodal Social Media Analysis for Gang Violence Prevention](#)"

Mar 19 – Context

HW 6 DUE: Final project datasheet

In class: *custom Tweet classifier exercise*

Mar 24 – Labor

Read: D'Ignazio and Klein, *Data Feminism*, ch 7 (pp. 173-202); Miriam Posner, "[The Software that Shapes Workers' Lives](#)," Kate Crawford and Vladan Joler, "[Anatomy of an AI](#)"

Mar 26 – Labor

HW 7 DUE: Final Project, first pass

In class: *exercise TBD*

Mar 31 – Organizing

Read: D'Ignazio and Klein, *Data Feminism*, conclusion (pp. 203-214); Margaret Mitchell et al., "[Model Cards for Model Reporting](#)"; Nataliya Nedzhvetskaya and JS Tan, "[What we've learned from over a decade of tech activism](#)" (and explore [database](#)); Yeshimabeit Milner, "Abolish Big Data" ([read excerpt](#) and watch [video 1](#) and [video 2](#))

April 1 – No Class. Professor at conference.

Unit 4: Course Wrap-up and Final Projects

April 7 – Placeholder day

HW 8 DUE: Final project, final roadmap

April 9 – Presentations

Optional: Attend Dr. Klein's talk at Georgia Tech (noon-1pm; with free lunch!) and/or reading at Charis Books (7:30-9pm).

Apr 14 – Presentations

Apr 16 – Presentations

Apr 21 – No class. Professor at Columbia.

Apr 23 – Course wrap up and reflection

FINAL PROJECT DUE: Thursday, April 30th, 10:30am