



POL SCI 935 – Computational Social Science

Fall 2020

Wednesdays, 4:00 pm – 6:40 pm
Bolton B79

Instructor Information

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I Overview

Changes in technology—specifically the transition from the analog age to the digital age—mean that we can now collect and analyze social data in new ways. This course is about doing social research in these new ways. We will focus on how traditional concepts of research design in the social sciences can inform our understanding of new data sources, and how these new data sources might require us to update our thinking on research design. As part of the course, you are going to conduct your own research project—step-by-step from developing the initial idea, collecting your data, and writing up the results. In addition to our theoretical discussions of research designs, you are going to learn the tools necessary to complete your project as part of several practical workshops held during the semester.

Course goals and learning objectives: Students will...

- ...describe the opportunities and challenges that the digital age creates for social research.
- ...evaluate modern social research from the perspectives of both social science and data science.
- ...create modern research proposals that blend ideas from social science and data science.
- ...practice the techniques needed to actually conduct their proposed research.

This is a hybrid course so most of our interactions will take place online. Each week, I am going to post lecture videos and additional material (problem sets etc.) on our Canvas course page (<https://uwm.edu/canvas/>). In addition to the online content, Yunhee Choi and I will host weekly Q&A sessions in Bolton B79. These meetings are intended as an open forum to answer your questions about the course material and to help you with your projects, so make sure to review all the readings and lecture videos before each session. While attendance is required, you can decide whether to join the meeting in person or remotely via Canvas / Collaborate Ultra (please bring your laptop if you attend in person). Furthermore, you may post any remaining questions on our Canvas discussion board or schedule remote individual meetings with Yunhee Choi or Patrick Kraft via email.

II Textbook and Required Material

There is one required textbook for the course and it is available at the bookstore:

[Salganik, Matthew J. 2019. *Bit by bit: Social research in the digital age*. Princeton University Press](#)

In addition, we are going to use the following resources that are available online:

- The Plain Person's Guide to Plain Text Social Science: <http://plain-text.co>

- R for Data Science (Wickham and Grolemund, 2016): <https://r4ds.had.co.nz>
- Data Visualization (Healy, 2018): <https://socviz.co>
- Text Mining with R (Silge and Robinson, 2017): <https://www.tidytextmining.com/>

We will be using RStudio Cloud for the programming portion of the course. Get started by creating your own (free) account at <https://rstudio.cloud> and work through their [primers](#). These interactive tutorials will help you familiarize yourself with basic programming concepts and R. On Canvas, you will find more information about how to join our shared RStudio Cloud workspace for the course.

In addition to our course material, there is a great set of YouTube videos provided by the Summer Institute in Computational Social Science, which covers many of the topics we'll discuss throughout the semester (and more!). You'll find links to these videos on Canvas as well:

- <https://www.youtube.com/channel/UCkRV9I1xz2Kw1gvLQ80adKw>.

III Schedule

Date	Topics	Readings / Assignments (due date)
09/02	Course Logistics	The Plain Person's Guide to Plain Text Social Science
09/09	Workshop: Into the Tidyverse!	Wickham and Grolemund 2016 , skim chs. 1-12
09/16	Introduction	Salganik 2019 , ch. 1; Groves 2011 - Brainstorm project ideas
09/23	Observing Behavior	Salganik 2019 , ch. 2; Penney 2016 - Assignment 1 due
09/30	Workshop: Data Visualization	Healy 2018 , chs. 1-4, skim rest
10/07	Asking Questions	Salganik 2019 , ch. 3; Guess, Nagler, and Tucker 2019 - Assignment 2 due
10/14	Running Experiments	Salganik 2019 , ch. 4; Munger 2017 - Project proposals due
10/21	<i>Project Proposal Session</i>	- Prepare project proposal presentation - Proposal peer review due
10/28	Workshop: Text Mining	Silge and Robinson 2017 , chs. 1-6, skim rest
11/04	Creating Mass Collaboration	Salganik 2019 , ch. 5; Van der Windt and Humphreys 2016 - Assignment 3 due
11/11	Ethics & The Future	Salganik 2019 , chs. 6-7; Gerber, Green, and Larimer 2008 - Assignment 4 due
11/18	Workshop: Power Analysis	Cohen 1992 ; Gelman and Carlin 2014 ; Blair et al. 2019 - Assignment 5 due
11/25	— Thanksgiving recess —	
12/02	Workshop: DiD & Preregistration	Angrist and Pischke 2008 , ch. 5; Gerber and Malhotra 2008 ; Humphreys, De la Sierra, and Van der Windt 2013 - Submit final paper to peer reviewers
12/09	<i>Final Paper Session</i>	- Prepare final paper presentation - Final paper review due
12/16	Paper submission	- Final paper due

Note: Schedule may be subject to change depending on our progress during the semester.

IV Grading and Work Load

Your final grade will be determined based on the following four components:

1. **Problem sets (20% = 4 * 5%):** There will be 5 assignments covering topics related to the chapter in [Salganik \(2019\)](#) and/or the optional reading required for the same week. *Of the 5 problem sets, I will take the average of the 4 highest grades, meaning that you can do poorly on 1 assignment without it impacting your grade.* Make sure to start working on each assignment as early as possible to make sure you have enough time to ask questions and resolve potential issues. I strongly encourage you to work in groups and discuss these assignments with your peers. However, each student must write up and submit their own original solution. Problem sets have to be submitted via Canvas by the end of the specified due date (usually by midnight on Mondays).
2. **Project Proposal (30%):** On October 14, you'll submit a written research proposal. Your proposal should clearly answer two questions: what you want to do and why we should care. Please don't spend too much time on a literature review. This is a chance for you to get supportive, helpful feedback on early stage ideas so you should feel free to take some chances and be open about the weaknesses in your proposals. Each proposal is limited to 1000 words. As you will see, 1000 words is quite short so use these words wisely. You are encouraged to include figures and graphs to illustrate your ideas, and these do not count against your word limit. All proposals must have clear titles. On October 21, you will have a chance to pitch your proposals in class. You will have 10 minutes to present your idea and then, as a class, we will spend 20 minutes discussing the proposal and how it can be improved.
3. **Final Paper (40%):** On December 2, you'll submit the first version of your final paper reporting initial results of your research project. Again, there is no need to spend too much time on a literature review unless it is needed to understand what you want to do and why we should care. The final paper is designed to take the first step from proposing research to doing research. Thus, in the final paper you must 1) describe your project and 2) take one concrete step toward actually doing the research. This step could be things like acquiring and summarize some data or running a pilot test of your survey on your friends. The goal here is not to do something perfect; it is to do something. Each paper is limited to 3000 words. On December 9, you will have a chance to present your research in class and you'll submit the final version of the paper on December 16.
4. **Peer Reviews (10% = 2 * 5%):** For the proposal and final paper, you will write a review of the work submitted by your peers. You will spend a lot of your career giving feedback on people's ideas. This is an art, and this is your chance to practice that art. The goal of your feedback is to be as helpful as possible to the author; it is not make yourself look smart. In writing your feedback, it is useful to start by summarizing the goals of the proposal as clearly and succinctly as possible. Then, you can describe things that you liked about the proposal. Finally, you can make suggestions about how the research described in the proposal can be improved; the more concrete and specific your suggestions the better.

I am planning to use the following grading scheme. Adjustments may only be made to improve grades:

93-100	A	77-79	C+	60-62	D-
90-92	A-	73-76	C	0-59	F
87-89	B+	70-72	C-		
83-86	B	67-69	D+		
80-82	B-	63-66	D		

Percentages ending in a decimal of .5 or greater will be rounded up to the next whole number.

Pass/Fail: Students who take this course under the Pass/Fail option must receive a grade of C or higher in order to obtain a Pass on their final grade. A final grade of “Incomplete” will only be given under exceptional circumstances and is solely at the discretion of Professor Kraft.

Late submission policy: Submissions after their respective due dates will only be graded for partial credit. For each day after the deadline, I will reduce the score by one grade point. I will make exceptions to this policy only in the most severe and rare circumstances (severe illness, etc.).

Campus network or Canvas outage: Due dates for assignments will be changed to the next day (due by midnight) if access to Canvas is not available for an extended period of time (greater than one entire evening, i.e., 6pm – 11pm).

Work Load: This is a full credit course (3 credits), so the expected time commitment from students is 144 hours throughout the semester, which amounts to approximately 10 hours per week. Students will spend 20% of their time reviewing the course material (completing assigned readings, watching lecture videos, taking notes). 20% will be spent working on problem sets. The majority of students' time (60%) will be spent working on their research project.

Activity	Estimated Time Commitment
Reviewing course material	29 hours
Completing problem sets	29 hours
Working on research project	86 hours

V Acknowledgements

I have adapted the ideas and language from the work of several educators for this syllabus and the course material. For example, I have borrowed liberally from other courses on Computational Social Science and related topics, as taught by [Matthew Salganik](#), [Chris Bail](#), and others. I appreciate their contributions to the discipline and thank all educators who make their teaching material available to others. To pay it forward, I will share my own material with anyone who is interested.

VI COVID Policies

Panther Community Health and Safety Standards

UWM has implemented reasonable health and safety protocols, taking into account recommendations by local, state and national public health authorities, in response to the COVID-19 pandemic. As a member of our campus community you are expected to abide by the [Panther Community Health and Safety Standards](#) and the [Interim COVID-Related Health & Safety Rules \(SAAP 10-12\)](#), which were developed in accordance with public health guidelines. These standards apply to anyone who is physically present on campus, UWM grounds, or participating in a UWM-sponsored activity.

With respect to instructional spaces (classrooms, labs, performance spaces, etc.):

- Six-foot social distancing must always be maintained.
- Masks are always required on campus, with limited exceptions in environments where hazards exist that create a greater risk by wearing a mask (for example, when operating equipment in a lab with the risk of a mask strap getting caught in machinery, or when flammable materials are being used).

- A student who comes to class without wearing a mask will be asked to put on a mask or to leave to get one at a mask handout station. Failure to do so could result in student conduct processes.
- You should check daily for COVID symptoms by completing the self-check at <https://uwm.edu/coronavirus/symptom-monitor/>. Symptoms may appear 2-14 days after exposure to the virus and include fever, cough, or shortness of breath or difficulty breathing. See the [CDC's Website](#) for more information about COVID-19 symptoms.

Students who test positive for or who are diagnosed based on symptoms with COVID-19 should complete this Dean of Students form:

https://cm.maxient.com/reportingform.php?UnivofWisconsinMilwaukee&layout_id=4

By doing so, students will get information on resources, help UWM identify individuals they may have come into contact with on campus so that UWM can work with the local health department, and allow UWM to clean campus areas you visited as appropriate.

Attendance Policy

Do not attend your in-person class if you have COVID-19, if you are experiencing symptoms consistent with COVID-19, if you have been in close contact with others who have symptoms, if you need to care for an individual with COVID-19, or have other health concerns related to COVID-19.

Students who miss class due to the above conditions will not be penalized for their absence and will not be asked to provide formal documentation from a healthcare provider.

If you are unable to attend class, take the following steps.

- Notify me in advance of the absence or inability to participate, if possible.
- Participate in class activities online and submit assignments electronically, to the extent possible.
- Reach out to me if illness will require late submission or other modifications to deadlines.
- If remaining in a class and fulfilling the necessary requirements becomes impossible due to illness or other COVID-related circumstances, contact me to discuss other options.

As your instructor, I will trust your word when you say you are ill, and in turn, I expect that you will report the reason for your absences truthfully.

Potential for Reversion to Fully Online Instruction

Changing public health circumstances for COVID-19 may cause UWM to move to fully online instruction at some point during the semester. UWM will communicate with students about moving to fully online instruction if the situation develops.

Navigate Student Success Platform and Mobile App

Students are encouraged to use a tool called Navigate. This tool can help you learn about academic resources, set up study groups in your courses, make appointments with your academic advisor, get reminders on important dates, and much more. In addition, Navigate allows instructors to send Progress Reports to students throughout the term, allowing for updates on your academic progress in a course in addition to your grade. You can log into the platform here: <https://uwmilwaukee.campus.eab.com/> or by finding the Navigate link under the Current Students tab on the [UWM home page](#). More information on how you can use Navigate and the app, including tutorials, can be found on [UWM's Navigate website](#).

Other

- To enable safe entry/exit from classrooms, all in-person instruction will end 15 minutes early, with additional course content to be covered online.
- All individual student meetings with faculty and teaching assistants will happen online.

VII University Policies

Drop and Add dates

Please see the following website for full details on the types of withdrawals that are available:
<https://uwm.edu/onestop/dates-and-deadlines/interactive-adddrop-calendar/>

Academic Integrity

No form of academic dishonesty will be tolerated. The University of Wisconsin-Milwaukee has detailed its policies on academic integrity (<http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/>). You should acquaint yourself with policies concerning cheating, fabrication, plagiarism, and academic interference. Any submission of work in this course constitutes a certificate that the work complies with university policies on academic integrity.

Student Disabilities

The University of Wisconsin-Milwaukee supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform me of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. I, will work either directly with you or in coordination with the Accessibility Resource Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA. Please also see <http://uwm.edu/arc/> for further information.

Other Policies

The University of Wisconsin-Milwaukee has several additional policies concerning issues such as accommodations for religious observances, students called to active military duty, discriminatory conduct, or sexual harassment available for you here: <https://uwm.edu/secu/syllabus-links/>. I strongly encourage you to access this link and familiarize yourself with these policies and procedures.

References

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