



NYU

**ROBERT F. WAGNER GRADUATE
SCHOOL OF PUBLIC SERVICE**

MSPP-GP 3101 Policy and Data Studio Summer 2022 Syllabus

Last updated: 5-29-22

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Location: [Bobst Library, Room LL151](#)

Class Session: June 13-July 28, 5:30-8:30pm

Class Schedule

The first 4 classes consist of core lectures for all students:

Class 1: Monday June 13 - Lecture 1

Class 2: Thursday June 16 - Lecture 2

Class 3: Tuesday June 21 (not 20) - Lecture 3

Class 4: Thursday June 23 - Lecture 4

Beginning the week of June 27, all students will attend only one of two sections (only one class per week):

Class 5: Project Development

Section A (Sam): Monday June 27

Section B (Lucy): Thursday June 30

Week of July 4th: **NO CLASS**

Class 6: Project Development

Section A: Monday July 11

Section B: Thursday July 14

Class 7: Project Development

Section A: Monday July 18

Section B: Thursday July 21

Class 8: Final Presentations

Both Sections: Monday July 25

Course Description

Policy and Data Studio builds on the core courses, your advanced coursework, and is specifically meant to deepen your data analysis, visualization, and communication skills in the context of a policy issue. Studio is a unique end event where you will use data to shed light on a policy question of your choice using the technical skills and specialized knowledge gained from the program. Guided by the Studio instructors, you will identify data sources, perform data cleaning and analyses, create an issue brief, and present draft iterations of your project for feedback and revisions. At the end of the Studio experience, you will present your findings to a panel of faculty and experts.

Learning Objectives

1. Learn how to find and access data, and understand sources, metadata, and limitations
2. Increase familiarity with a variety of types of data for policy analysis
3. Increase proficiency in open source data analysis software R
4. Gain basic proficiency with Git/Github for version control and collaboration
5. Deepen ability to conduct robust and appropriate data analysis
6. Effectively communicate analysis methods and results via visualization and narrative
7. Practice critical evaluation of data analyses

Class Format

This course is built around individual self-directed data analysis projects on a policy topic. Students will select a topic that interests them, develop questions to investigate, find data sources, write reproducible code to clean and analyze the data, create compelling data visualizations, and communicate their findings in a final blog post and presentation. Classes will include a mix of elements: lectures on general topics related to data analysis, live demos on more technical topics, student presentations, group discussions, peer review breakout sessions, and one-on-one meetings with the instructor. In the days between each class students will be expected to make significant progress on their analysis project, document their work, participate in discussions on Slack, and occasionally review the work of others.

GitHub - We have a GitHub organization, where each student will have a repository for all project files. Students will learn the basics of using GitHub for version control and collaboration.

Slack - Slack will be our primary communication tool for the course. The instructor will create a Slack workspace, organized into channels, and will share code snippets, examples, links, and other resources. Important class announcements will be made in the #general channel. Students are encouraged to ask all technical questions on Slack and help each other whenever possible, so that everyone can benefit from the exchange. Students are also encouraged to share their work and any helpful resources in Slack.

Brightspace - Brightspace will be used only for grading.

Google Drive - There will be a shared Google Drive folder where all resources will be organized, including lecture slides, class notes, reading materials, etc.

Class Notes - The instructor and students will collaborate using a Google Doc during each session to keep track of notes, links, code snippets and other resources for students to reference. Students are encouraged to participate in the note-taking for the benefit of themselves and the entire class.

Software - All software used in this class will be free and open source. Students will be required to install software on their personal computers.

Class Schedule and Topics (content subject to change)

Given the self-directed nature of this course, the material covered in class will adjust to reflect the interests and needs of students. As we identify common challenges or particular topics of interest, we can devote additional time and develop new materials to meet those needs. For example, some topics that we could cover might include: web scraping, working with web APIs, SQL databases, interactive data visualizations, spatial data analysis and mapping, regular expressions, geocoding, Docker containers, etc.

The first 4 classes consist of core lectures for all students:

Class 1: Monday June 13

ASSIGNMENT 1 DUE

- Introductions
- Course overview, objectives, structure
- Defining project purpose and data storytelling
- Data cleaning and manipulation
- R Basics

Class 2: Thursday June 16

- Project organization
- Documentation & reproducibility
 - Minimum requirements
 - Open source
 - Github basics
- Exploratory data analysis
- R continued
 - Joins
 - Aggregation and descriptive statistics

Class 3: Tuesday June 21 (not 20)

- Working with bias in data
- Design principles and intro to data visualization
- Data visualization in R/ggplot2
 - Pivoting data
 - Intro to spatial analysis in R

Class 4: Thursday June 23

- Flex topics

Beginning the week of June 27, everyone will attend only one of two sections (only one class per week).

Class 5: Project Development

ASSIGNMENT 2 DUE by Monday June 27, 5:30pm

Section A (Sam): Monday June 27

Section B (Lucy): Thursday June 30

Week of July 4th: **NO CLASS**

Class 6: Project Development

ASSIGNMENT 3 DUE by Monday July 11, 5:30pm

Section A: Monday July 11

Section B: Thursday July 14

Class 7: Project Development

Section A: Monday July 18

Section B: Thursday July 21

Class 8: Final Presentations, Monday July 25

- Both Sections
- Final presentations with faculty guests

Evaluation and Grading

Participation

The participation grade will be based on the student's engagement on the course Slack workspace, as well as active engagement during lectures, lab and project development sessions with fellow students. As we are moving quickly and learning a variety of new tools and skills, there are many opportunities to ask for help, to help others, or to share tips, tricks, and best practices. Students are also encouraged to share articles, visualizations, maps, tools, and anything else relevant to the course material to facilitate discourse.

Assignments

The three assignments represent key milestones in the development of the final project, which may consist of project outlines, draft iterations, and code samples. Assignment deliverables will require students to show a certain level of progress on their project, and they will be used for peer feedback with fellow students as well as 1-on-1 check-ins with instructors during project development days. There will also be opportunities to practice technical skills learned during lecture periods but there will not be assigned work beyond these final project-related submissions.

Note that the [first assignment](#) is due on the first day of class. Subsequent assignments are due during the project development period of the course. Assignments will be graded on a 10 point scale and account for 30% of the student's final grade.

Final Project

The final project will be a written policy brief that presents a data analysis making use of the tools and techniques learned in class. The final project is expected to share open-source code and thorough documentation of methods used in conducting the analysis. In addition to the written and technical components, students will prepare a short presentation that frames their policy issue, presents relevant data resources, shows analysis, tables, charts, maps, and visualizations, and draws some conclusions.

Grading Breakdown

- Participation: 20%
- 3 assignments: 30%
- Final Project: 50%
 - 10% - In-class presentation
 - 40% - Policy writeup and supporting code & documentation

Additional Notes

Academic Integrity

Academic integrity is a vital component of Wagner and NYU. Each student is required to sign and abide by Wagner's Academic Code. Plagiarism of any form will not be tolerated since you have all signed an Academic Oath and are bound by the academic code of the school. Every student is expected to maintain academic integrity and is expected to report violations to me. If you are unsure about what is expected of you should ask.

Accommodations for Students with Disabilities

Academic accommodations are available for students with disabilities. Please visit the Moses Center for Students with Disabilities (CSD) website at www.nyu.edu/csd and click on the Reasonable Accommodations and How to Register tab or call or email CSD at (212-998-4980 or mosescsd@nyu.edu) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

Religious Holidays

NYU's Calendar Policy on Religious Holidays states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify your lab instructor in advance of religious holidays that might coincide with exams to schedule mutually acceptable alternatives.