

VISUALIZATION AND DESIGN: FUNDAMENTALS

- CUNY Graduate Center | 5383
- Mondays 6:30-8:30
- Michelle McSweeney (mmcsweeney@gc.cuny.edu)
- Office Hours By Appointment
- <https://introductiondatavizfa21.commonsgc.cuny.edu>

DESCRIPTION

We live in a data-driven society where decisions are made based on analysis of “the data.” Frequently, that data is presented in the form of visualizations. The practice of visualization has data at its core, and accurate, clear visual presentation depends on deeply understanding the nature and nuance of a dataset. Visualization is also inextricably linked with communication and storytelling. This course situates the practice of data visualization within a larger context of data literacy and data ethics. Using Tableau Software, we will build a series of interactive visualizations that combine data and logic with storytelling and design. We will dive into cleaning and structuring unruly data sets, identify which chart types work best for different types of data, and unpack the tactics behind effective visual communication. With an eye towards critical evaluation of both data and method, projects and discussions will be geared towards humanities and social science research. Regardless of your academic concentration, you will walk away from this class with a portfolio of dynamic dashboards and a new interdisciplinary skillset ready to leverage in your academic and professional work.

OBJECTIVES

By the end of this class, you will be able to:

- Build interactive data visualization dashboards that answer a clear and purposeful research question
- Choose which chart type works best for different types of data
- Iterate with fluidity in Tableau Software leveraging visualization, aesthetic, and user interface best practices
- Structure thoughtful critiques and communicate technical questions and solutions
- Leverage collaborative tools, including Tableau Public, CUNY Academic Commons, and repositories of public data sets
- Contribute to the broader conversation about digital practices in academic research
- Critically read a wide range of chart types with an eye for accuracy, audience, and effectiveness
- Identify potential weaknesses in the collection methods and structure of underlying data sets
- Locate the original source of a visualization and its data

DATA / DHUMS 73000 Data Visualization Spring 2023

FORMAT

This course is a hybrid studio-lecture-online format. The lecture will focus on a theoretical component underpinning data visualization. The tutorials cover essential tools and techniques in Tableau. The Studio is found in the iterative nature of your projects, the pin-ups, and the weekly critiques.

The Tableau tutorials can be completed in any order, though they do correspond to the weekly sessions. The due dates are in the syllabus, but I will only check for completion on November 26th. You will not receive feedback on the labs because you are simply following along with the instructions.

Most weeks, you will critique a professionally made visualization. You will get the most out of that exercise by really taking some time to read the visual before analyzing it.

There are 3 projects. Before each project, you will submit a project proposal. The project proposal consists of 1 paragraph describing your question, the data you plan to use (specifying the variables), and a sketch of your visualization. We will have a 5-10 minute meeting to discuss your proposal. You will then complete your project.

After you complete your project, you will participate in a pin-up. This is an opportunity to get feedback from the class. The purpose of the pinups is to both practice giving and receiving feedback and it is an opportunity to envision how you can develop your project.

By the end of this course, you will have developed a deep understanding of the context around data visualization and how to effectively and ethically engage in visual communication.

SPRING 2023

This course is intended to be taken mostly in person. However, the 1:1 meetings will be conducted online due to the short nature of them. The format of each session is indicated in the syllabus. We will follow the GC mask and social distance guidelines. If you are uncomfortable or unable to come to campus for any reason, please make up the lecture by watching pre-recorded lecture. There is not 100% parity with these videos anymore, but they are close enough to suffice.

ASSIGNMENTS

During this course, you will complete four graded assignments: 3 projects and a white paper. You will get feedback on these 4 items. You will likely turn in each project before you feel fully ready to do so.

You will also complete tutorials on Tableau, forum discussions, and critiques, these are graded on completion and you will not receive feedback on them.

Submit your PROPOSALS & White Paper via email to mmcsweeney@gc.cuny.edu.

Post the link to your PROJECTS [to this spreadsheet](#).

Post your Tableau Tutorials/Labs to your Tableau Public Site.

Sign up for Critiques [on this spreadsheet](#) and Post the Critiques to the [Group Forum](#).

DATA / DHUMS 73000 Data Visualization
Spring 2023

PROJECT 1

15% Final Grade | [Guidelines](#)

One visualization built with New York City's 311 data

PROJECT 2

20% Final Grade | [Guidelines](#)

One visualization with a data set you created

FINAL PROJECT & PRESENTATION

25% Final Grade | [Guidelines](#)

A series of three visualizations answering an independent research question using a data set of your choice

WHITE PAPER

10% Final Grade | [Guidelines](#)

CRITIQUES

15% Final Grade | [Critiques Guidelines](#)

TABLEAU LABS

15% Final Grade | [Completion of Tableau Labs](#)

Course Calendar

*Note that some links might not work – find all of the readings on the course website.

	Wk of	Topic	Details	Due
1	Jan 30	Introduction	Suggested: Friendly, 2007 A Brief History of Data Visualization	respond to survey set up Tableau (Lab 0)
2	Feb 6	Structuring questions for visualization Data Viz types: The basics	Yau 2013 Chapter 1 Data Points Yau 2013, Chapter 3 of Data Points Nussbaumer Knaflic 2015. Chapter 2, Storytelling With Data: Choosing and Effective Visual Spiegelhater, D. Chpt 1	email MM the link to your Tableau public page Labs 1 & 2
	Feb 13	No Class	Recommended Reading on the relationship between science and colonialism (and by proxy, Data) https://www.smithsonianmag.com/science-nature/science-bears-fingerprints-colonialism-180968709/	
3	Feb 20	No Class	(we will not be meeting on the CUNY Monday on Feb 21) Optional: Tufte 1997 The Decision to Launch the Space Shuttle Challenger	post to DuBois critique Labs 3 & 4
4	Feb 27	Finish visualization Types In person meetings as needed (8:00-8:30pm)	Big book of dashboards (Chpt 13 – or any chapter that sparks your interest) Spiegelhater, D. Chpt 2 & 3	Post to Notebooks and Other Relics critique

DATA / DHUMS 73000 Data Visualization
Spring 2023

				email MM project proposal by 2/26
u	March 6	Project Pin Up	Viegas & Wattenberg 2015 Design and Redesign in Data Visualization	Present Project 1 post the link to your Project on the Project Sheet)
6	March 13	Quantified Self & Data Handling	Giorgia Lupi Dear Data TED Talk Lupi & Posavec Dear Data (this is not a reading, per se, but please interact with some of the visuals) A year in Numbers	Post to the Quantified Self critique Labs 5, 6, & 7
7	March 20	Data & Data Manipulation	<i>Gitelman, 2013: "Raw Data is an Oxymoron" Introduction</i> <i>Wang, 2013 Thick Data Medium post</i>	Post to the Storytelling critique Labs 8 & 9
8	March 27	One-on-one meeting		email MM your Project 2 proposal (by 6pm Sunday night 3/26)
9	April 3	Project Pin Up		Present Project 2 post the link to your Project on the Project Sheet)
10	April 17	Text as Data	Schulz 2011 NYTimes Book Review of Graphs, Maps, and Trees & Moretti 2007	post to the Text as Data Critique Lab 10

DATA / DHUMS 73000 Data Visualization
Spring 2023

11	April 24	Narrative & Story telling	McCandless TED Talk Suggested Andrew Stanton TED Talk: The Clues to a Great Story	Lab 11
12	May 1	One-on-one meeting		Final Project Proposal (6p Sunday night 4/30) Lab 12 or 13
13	May 8	Project Pin Up		Present Project 3 post the link to your Project on the Project Sheet)
14	May 15	Final Review		Present your Final Project
	May 22			email MM your White Paper

Additional Information

[Disability Services](#) | [Health & Wellness](#) | [Library](#) | [Ombuds](#) | [Policies & Procedures](#) | [Professional Development](#)