VISUALIZATION AND DESIGN: FUNDAMENTALS

- CUNY Graduate Center | 5417
- Mondays 6:30-8:30
- Michelle McSweeney (mmcsweeney@gc.cuny.edu)
- Office Hours By Appointment
- https://introductiondatavizfa21.commons.gc.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
Fall 2022

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.

FALL 2022

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.

Post the Forum responses and Critiques to the [Group Forum.](#)

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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

	Wk of	Topic	Details	Labs	Due
1	Aug 29	Introduction	Suggested: Friendly, 2007 A Brief History of Data Visualization	set up Tableau (0)	respond to survey
	Sept 5		No class		
2	Sept 12	Structuring questions for visualization	Yau 2013 Chapter 1 Data Points	Labs 1 & 2	email MM the link to your Tableau public page
3	Sept 19	Data Viz types: The basics	Yau 2013, Chapter 3 of Data Points || Nussbaumer Knaflic 2015. Chapter 2, Storytelling With Data: Choosing and Effective Visual	Labs 3 & 4	post to DuBois critique
	Sept 26		No Class		
4	Sept 29 CUNY Monday	One-on-one meeting (conducted async or contact me for arrangements)	Optional: Tufte 1997 The Decision to Launch the Space Shuttle Challenger		email MM your Project 1 proposal (by 7pm Sunday night 9/25) post to Notebooks critique
5	Oct 3	Project Pin Up	Viegas & Wattenberg 2015 Design and Redesign in Data Visualization		Present Project 1 post the link to your Blog Post on the Project Sheet)
6	Oct 10	Quantified Self	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	Labs 5, 6, & 7	post to Quantified Self critique

7	Oct 17	Data & Data Manipulation	*Gitelman, 2013: "Raw Data is an Oxymoron" Introduction || Wang, 2013 Thick Data Medium post*	Labs 8 & 9	
8	Oct 24	One-on-one meeting			email MM your Project 2 proposal (by **6pm Sunday night 10/23**) post to the Storytelling critique
9	Oct 31	Project Pin Up			Present Project 2 post the link to your Blog Post on the project sheet linked above)
10	Nov 7	Text as Data	Schulz 2011 NYTimes Book Review of Graphs, Maps, and Trees & Moretti 2007	Lab 10	post to the Text as Data Critique
11	Nov 14	Spatial Analysis	Solnit, 2016 Nonstop Metropolis (please review some of the visuals) || Knigge & Cope 2006 Grounded visualization: integrating the analysis of qualitative and quantitative data through grounded theory and visualization	Lab 11	
12	Nov 21	Narrative & Story telling	McCandless TED Talk	Lab 12	
13	Nov 28	One-on-one meeting	Suggested Andrew Stanton TED Talk: The Clues to a Great Story		Final Project Proposal (**6p**

				Sunday night 11/27)
14	Dec 5	Project Pin Up		Present Project 3 post the link to your project on the project sheet linked above
15	Dec 12	Project Showcase		Present your Final Project email MM your White Paper

Additional Information

Disability Services | Health & Wellness | Library | Ombuds | Policies & Procedures |
Professional Development