

The Erdős Institute

Data Visualization Mini Course

Syllabus

Aim

The aim of this mini course is to teach you how to produce data visualizations in a variety of programming languages/software while also touching on fundamental design principles.

Brief Overview of Content

In alignment with the aim of the mini course our materials touch on the following content to varying degrees:

- Plotting in Python:
 - matplotlib,
 - seaborn,
 - plotly, and
 - bokeh.
- Web browser visualizations:
 - HTML,
 - CSS,
 - SVG, and
 - d3.js.
- Basic Tableau
- Basic design principles

Mini Course Format

This content is asynchronous and can be completed at your own pace.

All lecture content will be available asynchronously through pre-recorded videos. Lectures will cover all technical content and some of the data visualization theory content. These videos can be found on the Erdős Institute website.

Problem sessions are a good way to practice the skills learned in lecture.

Other Mini Course Information

Prerequisites

The only coding prerequisite for this course is basic python competency. Any other programming language/software will be built up from scratch. It will be helpful to have an understanding of basic statistics and probability theory, but it is not required. Those looking to brush up on python should check out the Erdős Institute's "Python Prep" materials from our main data science boot camp.

Computer Capabilities

You will need to be able to open and run a jupyter notebook on your computer in order to complete the python content. If you can ensure that you have the following packages installed that would be ideal:

- pandas,
- numpy,
- matplotlib,
- seaborn,
- plotly, and
- bokeh.

In order to complete the web browser visualization content you will need code editing software, visual studio is a good choice. You will also need a web browser on your computer. We suggest using one of Mozilla Firefox, Safari, or Google Chrome. Access to the full Tableau suite requires a license. This license is free to current students. However, we will restrict ourselves to the free version of Tableau called Tableau Public, <https://public.tableau.com/app/discover>. You can access Tableau Public online or through a desktop app. Which one you use is up to you.

GitHub Repository

Educational materials for the mini course will be found at our GitHub repository:

<https://github.com/TheErdosInstitute/data-viz>

This is a private repository so you will need to be granted access before you can actually see the repository. You should be automatically added to the repository when you register for the course. If you registered but do not have access contact Steven Gubkin (steven@erdosinstitute.org) for assistance.