Environmental Data Visualization
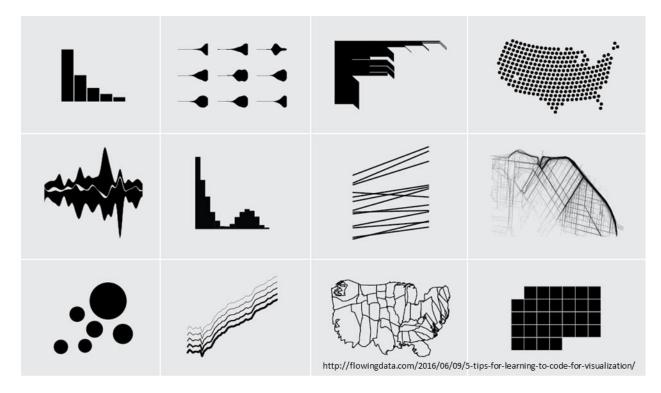

http://flowingdata.com/2016/06/09/5-tips-for-learning-to-code-for-visualization/

Instructor: Junhak Lee (junhakl@uoregon.edu), Dept. of Landscape Architecture, Univ. of Oregon
LA 410/510 Env. Data Visualization: Winter 2021 - online course (4 units). Office Hours: T.B.A.

This course will introduce students to data visualization theory and methods with environmental datasets. This course is designed for the students new to data visualization (NO prior experience in fields of statistics, design, programming, or data science is required). Students will learn how to transform data into effective visual representations (charts and graphs) that can be used as exploratory and analytical tools as well as a means of communication about our environments. Students will also learn how to acquire, parse, and analyze various environmental datasets (multivariate, temporal, text-based, geospatial data). This course will teach students basics of data visualization, data exploration, data collection, and preliminary computer coding. Even though the course will use R software, we will mainly focus on learning how to work with data (not statistical analysis) and visualize meaning in data from our environments.

This course is intended for landscape, environmental design, and planning students but it is also opened to the students from other disciplines who want to use data in creative and compelling visual ways as part of their academic or professional work.

Course Objectives
By the end of the course, students will be able to:
- Understand and apply principles of data visualization
- Acquire, parse, and analyze environmental data sets
- Use visualization components effectively to plot different data types

- Be familiar with data-driven problem-solving approaches in landscape and environmental planning

Textbook
- Visualize this: the FlowingData guide to design, visualization, and statistics by Yau, Nathan (2011)

Tools
- Excel (or opensource spreadsheet programs)
- R (R is a language and environment for statistical computing and graphics)
- R Studio (http://www.rstudio.com/)
- Tableau public (data visualization software, free version) (https://public.tableau.com/s/)
- [Optional] Adobe Illustrator (or Inkscape: free software)

Course Mechanics
This course is online (via the Canvas system) and conducted asynchronously (i.e. students can access class materials and conduct lab exercises anytime with their own schedule). However, the class activities and assignments (video lectures, readings, quizzes, and lab exercises) will be released on a weekly basis (with weekly due dates), so that course workloads are evenly distributed throughout the term.

In addition to online assistance, the instructor will be available during office hours to work one-on-one with students wishing in-person assistance.