PPOL 646: Data Visualization
McCourt School of Public Policy at Georgetown University
Fall 2014

Mondays: 6:30 p.m. – 9:00 p.m.
Location: Intercultural Center 217B

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Course Description
This course will explore the theoretical and practical issues related to the design and presentation of complex and multivariate information. Students will learn design elements related to presenting information, which will include design theory, aesthetics, and principles of visual communication. Students will use a variety of tools to process data and to create compelling and effective graphics, such as Excel, R, Adobe Illustrator, Tableau, and others. The course will introduce students to the design process: finding, collecting, and exploring data; constructing compelling stories with data; and using design to bring those elements together. Students will work individually and collaboratively to develop their skills in data analysis, data visualization, computer programming, and graphic design. Students will be required to identify and critique examples of information design and to create simple and complex graphics. The semester will culminate in an in-depth data visualization project.

Readings
Readings for the class will include book chapters, blogs, academic articles, and data visualizations. Readings will be posted to the class Blackboard site or emailed to the class. We will also try to have an active online discussion forum to discuss news and visualizations throughout the week.

Software
There will be four software-specific tutorials during the semester: Excel, R, Tableau, and Adobe Illustrator. These tutorials will be held in the Picchi Multimedia room in Lauinger Library during regular class time. Please note that the Picchi Multimedia room contains a limited number of Mac computers, so students will have to share.

In addition to using the computers in the Picchi Multimedia room, students may want to install these programs on their personal computers. Students can purchase copies of the Microsoft Office package and other software products through Georgetown University at https://sites.google.com/a/georgetown.edu/uis-docs/computers/purchase/software. The R (http://www.r-project.org/) and RStudio (http://www.rstudio.com/) software packages are free and open-source. Tableau Public (http://www.tableausoftware.com/public/) is a free version of the Tableau software package, which students should feel free to use; however, students will be provided a product key to obtain a free license of Tableau desktop by taking this course (details to follow). A free, 30-day trial version of Adobe Illustrator is available from Adobe (https://creative.adobe.com/products/download/illustrator), but it is recommended that students wait until later in the semester to activate the software so that they can use it for their final projects.

University Code of Conduct
Students should review Georgetown's Honor Code: http://scs.georgetown.edu/academic-affairs/honor-code and the University's academic and non-academic rules: http://grad.georgetown.edu/academics/policies/. Racist, sexist, or homophobic actions or comments will not be tolerated in any way. The University's *Academic Support* page includes information on support for disabilities and religious observances: http://academicsupport.georgetown.edu/.

In-class Exercises
A substantial part of this class will involve in-class exercises and discussions. Students should not expect 150 minutes of lecture each week. Students should come to class having read the assigned readings for the week. Students should also bring their personal laptops with a modern browser (e.g., Chrome, Firefox) and software (e.g., Excel, R, RStudio, and Tableau Public) already installed. Students should also bring materials with which to write and sketch.

Course Grades
Course grades will be based on the following:

- Problem sets and pop quizzes 20%
- Participation (in class and online forums) 30%
- Final Project Presentation 10%
- Final Project 40%

Problem sets are due at the beginning of class.
Lecture topics may be changed during the course of the semester.

Course Outline

Week 1 Wednesday, August 27	**Introduction: Types of Graphs, Form & Function**
Week 2 Monday, September 8	**Best Practices and Strategies to Create Effective Visualizations**
Week 3 Monday, September 15	**Tutorial: Excel** Picchi Multimedia Room, Lauinger Library, 1st Floor
Week 4 Monday, September 22	**Tutorial: Adobe Illustrator & Design** Picchi Multimedia Room, Lauinger Library, 1st Floor
Week 5 Monday, September 29	**Data, Statistics, and Data Journalism**
Week 6 Monday, October 6	**Guest Lecture: Hannah Fairfield, New York Times** **Data Journalism & Design Process**
Monday, October 13	*Columbus Day: No Class*
Week 7 Monday, October 20	**Tutorial: Tableau** Picchi Multimedia Room, Lauinger Library, 1st Floor
Week 8 *(Class date TBD)*	**Guest Lecture: Tom MacWright, Mapbox** *(Room TBD)*

Week 9 Monday, November 3	**Tutorial: R** Picchi Multimedia Room, Lauinger Library, 1st Floor
Week 10 Monday, November 10	**Static, Interaction, and Animation**
Week 11 Monday, November 17	**Final Project Practice Presentations**
Week 12 Monday, November 24	**Final Project Practice Presentations**
Week 13 Monday, December 1	**Better Presentations**
Week 14 Monday, December 8	**Final Project Presentations** (This class will be longer than most)