



STAT3622 Data Visualization (2016-17 Semester 1)

Course Outline

Instructor:	Dr. Aijun Zhang
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Lecture Hours:	Monday 12:30pm – 2:20pm (MW103) Thursday 12:30pm – 1:20pm (MW103)
Tutor:	Mr. Jia You (RR116)
Email:	u3005315@hku.hk
Tutorial Hours:	Friday 1:30pm – 2:20pm (RR103)

Course Objectives:

This course will focus on explorative data analysis with statistical graphics and interactive data visualization. Students will learn how to display, communicate and analyze data, using a set of tools such as R and Python.

Prerequisites:

STAT2602 (Probability and Statistics II) or STAT3902 (Statistical Models).

Contents and Topics:

Data science, data manipulation, explorative data analysis, statistical graphics, interactive data visualization, other selected topics.

Intended Learning Outcomes:

- Choose the best chart that fits the data
- Communicate effectively using statistical graphics
- Create compelling visualization using computer software

Assessment Method:

Continuous:	Participation and in-class quizzes	40%
Final Project:	Demo, oral presentation and written report	60%

Course Website: <http://www.statsoft.org/teaching/stat3622> & moodle.hku.hk

Programming: R, Python, D3.js

References and Online Materials:

1. Chang, W. (2013). *R Graphics Cookbook*. O'Reilly. <http://www.cookbook-r.com/>
2. Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis* (2nd). Springer. <http://ggplot2.org/book/>; <http://hadley.nz/>
3. Rossant, C. (2015). *Learning IPython for Interactive Computing and Data Visualization* (2nd). Packt. <http://ipython-books.github.io/minibook/>
4. Murray, S. (2013). *Interactive Data Visualization for the Web: An Introduction to Designing with D3*. O'Reilly.
5. Yau, N. (2011). *Visualize This: The FlowingData Guide to Design, Visualization, and Statistics*. Wiley. <http://book.flowingdata.com/>
6. Ward, M. O., Grinstein, G. and Keim, D. (2015). *Interactive Data Visualization: Foundations, Techniques, and Applications* (2nd). CRC.
7. D3 in Depth. <http://d3indepth.com/>
8. Shiny Tutorial. <http://shiny.rstudio.com/tutorial/>
9. RStudio Cheat Cheats. <https://www.rstudio.com/resources/cheatsheets/>

