



STAT3622 Data Visualization (2017-18 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:	Jia (Jason) You (RR116, u3005315@hku.hk)
Tutorial Hours:	Thursday 2:30pm – 3:20pm (RR103)

Course Objectives:

This course will focus on exploratory data analysis with statistical graphics and interactive data visualization. Students will learn how to display, communicate and analyze data, using a set of packages based on R and Python programming.

Prerequisites:

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

Contents and Topics:

Data science, data manipulation, exploratory 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 via programming tools

Assessment Method:

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

Course Website: <http://stat3622.saas.hku.hk/> & <http://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. Simon, P. (2014). *The Visual Organization - Data Visualization, Big Data, and The Quest for Better Decisions*. Wiley.
6. Yau, N. (2011). *Visualize This: The FlowingData Guide to Design, Visualization, and Statistics*. Wiley. <http://book.flowingdata.com/>
7. D3 in Depth. <http://d3indepth.com/>
8. Shiny Tutorial. <http://shiny.rstudio.com/tutorial/>
9. RStudio Cheat Cheets. <https://www.rstudio.com/resources/cheatsheets/>