SOSC 1100 **Quantitative Data Analysis for Social Research I**

Spring, 2021
Tuesday & Thursday, 1:30-2:50pm
(<mark>Venue TBD</mark>)

Instructor: Dr. WANG, Hongbo (hbwang@ust.hk)
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Course Description and Objectives:

This course focuses on practical aspects and implementation of social data analysis by introducing basic yet hands-on techniques for presenting, analyzing, and interpreting quantitative data, many of which are rarely taught in a regular statistics course. It is deliberately designed as complementary to a formal and theoretically-oriented introductory statistics courses.

This course introduces basic knowledge about quantitative data analysis from a social scientific perspective, from data generating processes to implementation. Devoted computing sessions, a signature feature of the course, demonstrate hands-on techniques, such as data extraction, data management, variable manipulation, and descriptive analysis. Students will have the chance to implement ideas and methods from the lectures through in-class exercises, as well as a project, by applying what they learn to real-world data. Upon completion of the course, students should have acquired useful skills for social data analysis as well as a better understanding of quantitative social scientific research.

Organization:

The lectures will be given on Thursdays while Tuesdays are reserved for computing sessions (See "Course Schedule" below for detail).

Course materials will be distributed through Canvas. Note that all course material should be used *exclusively* for the purpose of this course.

Computing:

Mainly R

References:
Babbie, Earl. 2013. *The Practice of Social Research*. (13th E.). Wadsworth Publishing. [**B**]

Baumer, Benjamin S., Daniel T. Kaplan, and Nicholas J. Horton. 2017. *Modern Data Science with R*. Chapman and Hall/CRC. [**BKH**]

[*Optional*] Moore, David S., George P. McCabe and Bruce A. Craig. 2014. *Introduction to the Practice of Statistics*. (8e.) New York: W. H. Freeman & Co. [**MMC**]

Navarro, Danielle. Learning statistics with R: A tutorial for psychology students and other beginners (Version 0.6).

Salganik, Matthew. 2017. *Bit by Bit: Social Research in the Digital Age*. Princeton University Press. [**S**]

Assessment:
Your grade will be determined as follows:
(1) Attendance and class participation: 30%
Attendance and class participation is required for all classes, either regular lecture or computing session. One point will be docked for each *instance of illegitimate absence or lack of participation (e.g. non-response to questions)*.

(2) In-class quizzes: 40%
There will be four in-class quizzes, each accounting for 10% of the final grade. The quizzes will be focused on R implementation.

(3) Final exam: 30%
The final exam, which covers the whole course, will be based on both lectures and R computing.

Course Schedule (*Subject to adjustment*)

Calendar Week	Topic	Readings	Important Events
Week 1: Tuesday Thursday	Introduction Study Design		
Week 2: Tuesday Thursday	[**R**] Computing session ***NO CLASS (2/11)**		
Week 3: Tuesday Thursday	[**R**] Computing session Sources of Social Data: I		
Week 4: Tuesday Thursday	[**R**] Computing session Sources of Social Data: II		
Week 5: Tuesday Thursday	[**R**] Computing session Relational Database		
Week 6: Tuesday Thursday	[**R**] Computing session Variable: Measurement		
Week 7: Tuesday Thursday	[**R**] Computing session Variable: Coding & Transformation		
Week 8: Tuesday Thursday	[**R**] Computing session Describing Uni-variate Distribution: Graphs		
Week 9: Tuesday Thursday	[**R**] Computing session ***NO CLASS (4/1)**		
Week 10: Tuesday Thursday	***NO CLASS (4/6)** Describing Uni-variate Distribution: Summary Statistics		**Quiz 1**
Week 11: Tuesday Thursday	[**R**] Computing session Two-way Table		**Quiz 2**
Week 12: Tuesday Thursday	[**R**] Computing session Comparing Distributions by Group		
Week 13: Tuesday Thursday	[**R**] Computing session Scatterplot		**Quiz 3**
Week 14: Tuesday Thursday	[**R**] Computing session Hierarchical Data Structure		**Quiz 4**
TBD			**Final Exam**