SOSC 2400 Intermediate Statistics for Social Research
Fall 2018
Tuesday & Thursday, 9:00-10:20am
Room 2404 (Lift 17-18), Academic Building

Instructor: Dr. WANG, Hongbo (hbwang@ust.hk)
        Office: Academic Building, Room 2372 (Ext. 7804)
Office Hours: Thursday, 11:00am-12:00pm

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Office Hours: Monday, 14:00-15:00pm
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        Office: Academic Building, Room 3001 (Ext. 69989716)
Office Hours: Monday, 10:00am-11:00am

Course Description and Objectives:
Introduction to quantitative methods used across social science disciplines. The course covers basic statistical inference, the linear regression model, and regression analysis in practice. The emphasis is applied. Students will learn to use a major statistical package to analyze social data of the type commonly used in research. Special attention will be given to the specification of models, the interpretation of results, and the challenges posed by reverse causality, omitted variable bias, endogeneity, and other issues that commonly arise in the analysis of social data. The course will briefly introduce elaborations the linear regression model developed to address specific situations such as limited dependent variables.

Organization:
The class will meet twice a week on Tuesday and Thursday, respectively, each lasting for one hour and twenty minutes. The lectures are given on Thursdays, while Tuesdays are reserved for computing sessions, in tandem with the lectures (See "Course Schedule" below for details).

No further tutorials for this course. But we will hold review sessions before the final exam.

The instructor will regularly post course materials on Canvas, including lecture notes and assignments. You will need an ITSC account to access these materials. All materials should be used exclusively for this course, with all copyrights reserved. Please do not distribute any material for other purposes.

Students are encouraged to form study groups to help each other with class materials and computing exercises. *However, no one is allowed to communicate with any other student during in-class quizzes and closed-book exams.*

Computing:
We will mainly use R as computing tool.

Prerequisite:
SOSC 1100

References:
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]

Imi, Kosuke. 2018. *Quantitative Social Science: An Introduction*. Princeton University Press

YouTube video**:** https://www.youtube.com/user/mrdarkstatstudio

Assessment:
Your grade will be determined as follows:
(1) Attendance and class participation: 10%
Attendance is required for all regular lectures and computing sessions. TA will take attendance via iPRS. You will get one point deducted for each lecture missed. Students are also expected to finish assigned readings before class and participate in class activities.

(2) Quizzes: 30%
There will be 5 to 6 in-class quizzes. The quizzes are open-booked. Yet students are supposed to complete the quizzes independently.

(3) Mid-term exam: 30%
The mid-term exam will be closed-book. You are only allowed to use regular calculator for calculation during the exam. The midterm exam will draw exclusively on lectures from the first half of the course.

(4) Final exam: 30%
The final exam will also be closed-book. You are only allowed to use a regular calculator for calculation during the exam. The final exam will be cumulative yet with more weight given to post-midterm lectures.

Course Schedule (*Subject to adjustment***)**

Week: Date	Topic	Readings	Quizzes
Week 1: Tuesday Thursday	***Course Introduction** Describing Distribution & Relationship: A Review	[MMC] Ch1: 1.1-1.3 Ch2: 2.1-2.7	
Week 2: Tuesday Thursday	*Computing Session* Normal Distribution	[MMC] Ch1: 1.4	
Week 3: Tuesday Thursday	*Computing Session* Sampling & Sampling Distribution	[MMC] Ch3: 3.1-3.3; Ch5: 5.1-5.3	
Week 4: Tuesday Thursday	*[**Cancelled Due to Holiday**] Probability Models	[MMC] Ch4: 4.1-4.5	
Week 5: Tuesday Thursday	*Computing Session* Introduction to Inference	[MMC] Ch6: 6.1-6.4	
Week 6: Tuesday Thursday	*Computing Session* ***Midterm Exam**		
Week 7: Tuesday Thursday	*Computing Session* Inference for Population Means	[MMC] Ch7: 7.1-7.2	
Week 8: Tuesday Thursday	*Computing Session* Inference for Population Proportion	[MMC] Ch8: 8.1-8.2	
Week 9: Tuesday Thursday	*Computing Session* Inference for Two-way Tables	[MMC] Ch9: 9.1-9.2	
Week 10: Tuesday Thursday	*Computing Session* OLS Regression (I)	[MMC] Ch10: 10.1-10.2	
Week 11: Tuesday Thursday	*Computing Session* OLS Regression (II)	[MMC] Ch11.1-11.2	
Week 12: Tuesday Thursday	*Computing Session* Causal Inference		
Week 13: Tuesday Thursday	*Computing Session* (**Review**) **Review*		
TBA	***Final exam**		