a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Department of Sociology
Faculty of Arts Vancouver Campus
6303 N.W. Marine Drive
Vancouver, BC Canada V6T 1Z1

www.soci.ubc.ca

SOCI 418A 202: Social Statistics II
2017 Winter Session (3 Credits)
Wednesdays 2:00-5:00 pm
Mathematics 104

Instructor: Yue Qian
Office: Anthropology and Sociology (ANSO) 122
Email: yue.qian@ubc.ca
Office Hours: Wednesdays 12:00-13:30 pm and by appointment

Course Description:
This class is designed to help you develop an understanding of the logic behind various statistical techniques based on linear regression models. My approach to teaching stresses conceptual comprehension, based on statistical theory, rather than mathematical manipulation, by employing a "hands-on" approach to analyzing real data. However, please note that I am assuming a basic understanding of algebra, calculus, and introductory statistics. You will learn the principles of multiple regression analysis by using a popular statistical program called Stata. The material covered in this course falls into one of four categories: (1) introduction and review, (2) principles of multiple regression, (3) functional forms of the generalized linear model, and (4) regression diagnostics. Throughout the course, I will be emphasizing the assumptions inherent in regression analyses, consequences of violating these assumptions, and possible solutions when assumptions have been violated.

The professor reserves the right to make changes to this syllabus as needed to address the educational needs of the class.

Required Course Materials:
1. Fox, John. (2016). *Applied regression analysis and generalized linear models*. Third Edition. Thousand Oaks, CA: Sage Publications. (https://us.sagepub.com/en-us/nam/applied-regression-analysis-and-generalized-linear-models/book237254%20)

2. Stata will be available to you for free on computers in Room 150 in the Anthropology and Sociology Building. If you wish to buy a copy of Stata for your personal computer, I recommend purchasing an individual license through Stata's Grad Plan, the details of which are outlined at the following URL:
http://stata.com/order/new/edu/gradplan.html
The best options are Stata/IC 15 with a one-year license for $125 or a perpetual license for $198. If you anticipate relying on very large datasets to complete your research, you may want to consider getting Stata/SE.

Recommended Textbook:
Long, J. S. (2009). *The workflow of data analysis using Stata*. College Station: Stata Press. (http://www.indiana.edu/~jslsoc/web_workflow/wf_home.htm)

Course Evaluation:

I.   Attendance in all classes is required. Class attendance accounts for 5% of your overall course grade. You are requested to arrive on time. Repeated tardiness will be penalized.

II.   There will be four homework assignments, each of which is worth 15% of your overall course grade. Each assignment requires that you use Stata to analyze data, interpret the results of these statistical analyses, and demonstrate an understanding of statistical principles discussed in lecture. Please turn in your assignment *at the beginning* of the class on the due date. Late assignments will not be accepted.

I believe that cooperation is the basis for good learning. Therefore, I encourage you to work together on assignments. I leave it up to your individual consciences to determine the fine line between cooperative work and copying from one another. Please keep in mind that the purpose of this class is for you to *understand* how to use multiple regression techniques to analyze data. This goal will be facilitated by working in small groups – not by copying each other's answers. Therefore, talk and consult with other students as much as you like, but in the end **each student is required to complete their own individual written work.** If you have any questions or concerns, please discuss them with me.

III.   There will be a take-home final exam that accounts for 35% of your overall course grade. I will distribute the final at the end of the class on *November 29, 2017*. You must turn in your final exam to *the ANSO dropbox before 4pm on November 30, 2017*. Late exams will not be accepted. The content of the examination will include the range of topics covered during the course. You will be required to answer conceptual questions and interpret results, but you will *not* be asked to use Stata to analyze data. In contrast to the homework assignments, the final exam is exclusively a test of individual work; therefore, you are *NOT* permitted to work together. Any question regarding the content or format of the exam must be directed to me.

All written assignments must be typed, double-spaced, and use 12-point font. Formulas can be created using an equation editor in Word. Always make a copy of your work (either a hard or electronic copy) before you turn it in.

Academic Dishonesty will not be tolerated. This includes lying, cheating, and plagiarism. I will deal with instances of academic dishonesty, should they occur, according to university policy. Please see the Code of Student Rights, Responsibilities, and Conduct for university policies on academic misconduct and academic dishonesty: http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,0,0 I reserve the right to use any tool available to determine if a student is engaged in this kind of behavior.

The University accommodates students with disabilities who have registered with the Disability Resource Centre. The University accommodates students whose religious obligations conflict with attendance, submitting assignments or completing scheduled tests and examination. Please let me know *during the first two weeks of class* if you will require any accommodation on these grounds.

UBC's Early Alert program is designed to provide students with academic advising, financial advising, counseling, and other resources that can help you get back on track. **If you are feeling stressed, please notify me** and indicate that you would like assistance. While we are not trained to help with personal problems, we can get you help from people who can assist you. Any information that they receive from you or us is strictly confidential and is in the interest of your academic success and wellbeing. For more information, please visit earlyalert.ubc.ca.

Faculty of Arts Grading Table:

A+	90-100	B+	76-79	C+	64-67	D	50-54
A	85-89	B	72-75	C	60-63	F	0-49
A-	80-84	B-	68-71	C-	55-59		

Course Outline:

Week 1	6 Sep	Introduction to the Course & Examining Your Data	Chapter 1: pp.1-10 Chapter 3: pp.28-53
Week 2	13 Sep	Transforming Your Data & STATA	Chapter 4: pp.55-75
Week 3	20 Sep	Review: Central Limit Theorem & Hypothesis Testing	
Week 4	27 Sep	Introduction to Regression & Linear Least-Squares Regression & **Homework 1 Due**	Chapter 5: pp.82-92
Week 5	4 Oct	Multiple Regression	Chapter 5: pp.92-102
Week 6	11 Oct	STATA & Statistical Inference (Part I)	Chapter 6: pp.106-114
Week 7	18 Oct	Statistical Inference (Part II) & STATA	Chapter 6: pp.114-123
Week 8	25 Oct	Dummy Variables & STATA & **Homework 2 Due**	Chapter 7: pp.128-140
Week 9	1 Nov	Interactions & STATA	Chapter 7: pp.140-150
Week 10	8 Nov	Unusual & Influential Data & STATA & **Homework 3 Due**	Chapter 11: pp.266-289
Week 11	15 Nov	Non-Normality & Heteroskedasticity & STATA	Chapter 12: pp.296-307
Week 12	22 Nov	Non-Linearity & STATA	Chapter 12: pp.307-323
Week 13	29 Nov	Collinearity & STATA & Review & **Homework 4 Due**	Chapter 13: pp.341-366