Sociology 252 001

Data Analysis in Sociological Research

Classroom: 307 Manning Hall
Class Hours: 10:00-10:50 MF
Labs: 10:00-10:50 W, 322 Saunders Hall

Instructor: Junpeng "J.P." Li
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Office Hours: 11:00 AM-12:00 PM Mondays and by appointment
Email: jpli@email.unc.edu
Course website: blackboard.unc.edu

Purpose of the Course

This course will cover the elementary quantitative techniques most commonly utilized in sociological investigation. Our goal is to understand the logic of quantitative social research and the statistical analysis of social data. You will learn how to answer theoretical and practical sociological questions, and will gain a solid base of knowledge from which you can critically evaluate the quality of statistical evidence produced by social scientists. This course will emphasize the application of statistics over mathematical calculations. This is not to imply that we will be unconcerned with the mathematics underlying the procedures, but our focus will be on developing a conceptual understanding of the intent of such calculations. Topics covered in the course include descriptive and inferential statistics, hypothesis testing, and elementary causal models. No prior knowledge of statistics is required or assumed. You will, however, need to have a good working knowledge of high school algebra. If your algebra is rusty, you should consider taking or auditing an algebra course prior to or concurrent with this course.

Rules of the Road

1. We start and end class on time.
2. Turn off cell phones, pagers, and beepers.
3. Check your email account and Blackboard daily.
4. Always bring your course text and a calculator to class.

Honor Code

The University Honor Code will be in effect through all exams, quizzes, and written assignments. Please read carefully the provisions of the Honor Code, make certain you understand and adhere to them, and ask me to clarify any questions you have regarding the Code. The Code is a long and valuable tradition at UNC—protect it! Here is the link to the Code: http://honor.unc.edu/honor/code.html.

Texts

Alan Agresti and Christine Franklin. 2007. *Statistics: The Art and Science of Learning from Data* (with CD-ROM). Upper Saddle River, NJ: Pearson Education.

Requirements

Class participation and active learning are vital to the success in this course. Participation includes attending class regularly, completing the readings prior to class, and finishing the homework assignments on time.

The course consists of lectures and lab sessions, in which you will work with SPSS and other problem-solving exercises. Attendance at lab is optional but recommended. The labs should help you absorb the material and develop your SPSS skills. Remember to bring the textbook and the data CD to every lab session.

There will be a fair amount of **homework assignments**, **three mid-term exams (September 15, October 13, and November 10)**, and one **final exam (8 a.m. December 11 Monday)**. Each exam will include a combination of true/false, multiple choice and work problems. The exams are designed to evaluate conceptual understanding of material rather than memorization. The exams are all non-cumulative (however, a certain amount of previous knowledge is assumed), closed-book and closed-notes. I will provide the necessary formulas so that you will not need to engage in excessive memorization. There will be no makeup exams other than for those with a legitimate medical excuse or family emergency.

You are encouraged to work in groups for homework assignments, but always be sure that ultimately you take exams on your own. All assignments are to be turned in to me by 10:00 AM the next class meeting day. The work is considered late if the day's lecture has already begun. Late work will not be accepted and graded except under extenuating circumstances. Since I understand that from time to time your schedule may not allow you to turn in your homework on time, your two lowest scores will be dropped when computing your final homework grade. Your grades will be reported on Blackboard.

While I will go out of my way in most cases to avail myself to you for assistance with course work, I will not make concessions for those who do not seek help in a timely manner or who regularly miss class meetings. You are responsible for keeping up to date on any changes announced in class or by email to the class. Feel free to contact me or seek help from your fellow classmates if you see that you are struggling. The cumulative nature of the course means that anything you have missed will impair your ability to understand what is coming next.

Components of Your Grade

Homework	20%
Mid-terms	60%
Final	20%
Total	100%

Grading Scale

A = 93–100 A- =90–92.9 B+ = 87–89.9 B = 83–86.9 B- = 80–82.9 C+ = 77–79.9

C = 73–76.9 C- = 70–72.9 D+ = 67–69.9 D = 63–66.9 D- = 60–62.9 F= Below 60

Course Outline

August 23 (Wednesday): Introduction

August 25 (Friday): Statistics: The Art and Science of Learning from Data
Chapter 1.
Assignments: 1.22, 1.24, 1.28

August 28 (Monday): Exploring Data with Graphs and Numerical Summaries I
2.1, 2.2, 2.3.
Assignments: 2.82a.b., 2.84, 2.88, 2.90, 2.92

September 1 (Friday): Exploring Data with Graphs and Numerical Summaries II
2.4, 2.5, 2.6.
Assignments: 2.82c., 2.94, 2.96, 2.98, 2.100, 2.110, 2.113, 2.117

September 4 (Monday): Labor Day. No class held!

September 8 (Friday): Association: Contingency, Correlation, and Regression I
3.1, 3.2.
Assignments: 3.56, 3.58, 3.59, 3.60, 3.61

September 11 (Monday): Association: Contingency, Correlation, and Regression II
3.3, 3.4.
Assignments: 3.62, 3.64, 3.66, 3.70, 3.82

September 15 (Friday): First Mid-term! Bring a calculator and paper!

September 18 (Monday): Gathering Data I
4.1, 4.2.
Assignments: 4.50, 4.52, 4.54, 4.56, 4.58, 4.60

September 22 (Friday): Gathering Data II
4.3, 4.4.
Assignments: 4.68, 4.70, 4.72, 4.74, 4.76, 4.84

September 25 (Monday): Probability in Our Daily Lives I
5.1, 5.2.
Assignments: 5.2, 5.22, 5.58, 5.60, 5.62

September 29 (Friday): Probability in Our Daily Lives II
5.3, 5.4.
Assignments: 5.26, 5.32, 5.46, 5.64, 5.76, 5.80

October 2 (Monday): Probability Distributions I
6.1, 6.2.
Assignments: 6.2, 6.4, 6.6, 6.16, 6.18, 6.26

October 6 (Friday): Probability Distributions II
6.3, 6.4.
Assignments: 6.32, 6.36, 6.40, 6.46, 6.50, 6.52

October 9 (Monday): Probability Distributions III
6.5, 6.6.
Assignments: 6.54, 6.56, 6.62, 6.66, 6.104

October 13 (Friday): Second Mid-term! Bring a calculator and paper!

October 16 (Monday): Statistical Inference: Confidence Intervals I
7.1, 7.2.
Assignments: 7.4, 7.6, 7.8, 7.12, 7.18, 7.20

October 18 (Wednesday) & October 20 (Friday): Fall Break. No class held!

October 23 (Monday): Statistical Inference: Confidence Intervals II
7.3, 7.4, 7.5.
Assignments: 7.26, 7.30, 7.44, 7.46, 7.56

October 27 (Friday): Statistical Inference: Significance Tests About Hypotheses I
8.1, 8.2.
Assignments: 8.2, 8.4, 8.10, 8.12, 8.20

October 30 (Monday): Statistical Inference: Significance Tests About Hypotheses II
8.3, 8.4.
Assignments: 8.26, 8.32

November 3 (Friday): Statistical Inference: Significance Tests About Hypotheses III
8.5, 8.6.
Assignments: 8.46, 8.50, 8.52, 8.54, 8.56

November 6 (Monday): Comparing Two Groups I
9.1, 9.2.
Assignments: 9.2, 9.4, 9.5, 9.14, 9.24

November 10 (Friday): Third Mid-term! Bring a calculator and paper!

November 13 (Monday): Comparing Two Groups II
9.3, 9.4, 9.5.
Assignments: 9.28, 9.32, 9.44, 9.46, 9.52, 9.56

November 17 (Friday): Analyzing the Association between Categorical Variables I
10.1, 10.2.
Assignments: 10.2, 10.4, 10.10, 10.12, 10.16

November 20 (Monday): Analyzing the Association between Categorical Variables II
10.3, 10.4, 10.5.
Assignments: 10.24, 10.26, 10.32, 10.36, 10.40

November 22 (Wednesday) & November 24 (Friday): Thanksgiving. No class held!

November 27 (Monday): Analyzing the Association between Quantitative Variables: Regression Analysis I
11.1.

Assignments: 11.1, 11.4, 11.6, 11.7, 11.8

December 1 (Friday): Analyzing the Association between Quantitative Variables: Regression Analysis II
11.2, 11.3.
Assignments: 11.10, 11.18, 11.26, 11.28, 11.32, 11.36

December 4 (Monday): Analyzing the Association between Quantitative Variables: Regression Analysis III
11.4, 11.5
Assignments: 11.38, 11.40, 11.48, 11.50, 11.54, 11.55

December 6 (Wednesday): Course wrap-up

December 11 (Monday): 8 a.m. Final Exam. Bring a calculator and paper.