INTRODUCTION TO SOCIAL RESEARCH II

SOCI 206-001
Spring (Jan 11, 2016–May 6, 2016)
Tuesday, Thursday 9:30 AM – 10:45 AM
111 Avery
University of Nebraska-Lincoln

Professor: Dr. Jeffrey A. Smith
Office: 706 Oldfather Hall
Email: jsmith77@unl.edu
Office Hours: Tuesday, Thursday 11:00 – 12:00 AM or by appointment

TA: Ben Forthun
Office: 734 Oldfather Hall
Email: benjaminjforthun@gmail.com
Office Hours: Wednesday and Friday 12:00 – 1:00 p.m. or by appointment

Prerequisite: SOCI 205: Introduction to Social Research I

Course Description
This course covers the basics of data analysis. By the end of the course you should have gained a set of practical skills: you should be able to manipulate data sets, produce graphics, and, in general, be able to answer substantive questions using real data. Students will gain experience using a statistical software package (Stata), while learning how to interpret statistical tests and measures. Students will thus learn new computer skills (specifically data management skills) as well as the basics of statistical inference; both are necessary to analyze data in a sophisticated manner. Note that the mathematical parts of the course are designed with sociologists in mind and little mathematical background is needed to do well.

The hope is that this class will prove useful in your future endeavors. At UNL, this course will prepare you for SOCI 495 (Senior Seminar), where you will produce a full research project on your own. Research skills will also be essential if you work with faculty on a research project (which I encourage you to do) through the UCARE or USTARS programs. Basic research/data skills are also very attractive on the job market, particularly given the increasing proliferation of data. Finally, this class will serve you well if you go on to future study in graduate school.

Achievement-Centered Education (ACE) Student Learning Outcomes
The University of Nebraska-Lincoln seeks to provide quality education to all of its students. To that end, it has designated certain classes as ACE certified. These classes provide and assess specific learning outcomes. As an ACE class, Sociology 206 - Introduction to Social Research II will facilitate Learning Outcome #3: Use mathematical, computational, statistical, or formal reasoning (including reasoning based on principles of logic) to solve problems, draw inferences, and determine reasonableness. This course introduces students to the basic statistical analysis of social data, including descriptive statistics, inferential statistics, bivariate measures of association, and multivariate techniques.

Course objectives
- Provide practical skills to analyze and draw conclusions from quantitative social science data. Emphasis will be placed on understanding, computing, and interpreting basic statistics; interpreting and evaluating survey research findings; and analyzing quantitative data with a statistical software program.
- Provide opportunities to acquire knowledge of how to answer social science questions and problems with quantitative and statistical data and make inference to a population of interest using descriptive statistics, bivariate associations, and multivariate techniques through lectures, homework assignments, hands-on activities, and course projects.
- Offer opportunities to acquire knowledge on drawing inference to a population and determining whether those inferences are reasonable through lectures, homework assignments, hands-on activities, and course projects.
- Instill an appreciation for the uses of quantitative data analytic techniques and their relevance to social issues and social life.
- Provide students with practical skills to analyze and draw conclusions from quantitative data with a particular emphasis on social science theories and questions.
- Provide students the necessary skills to become informed consumers of statistics in everyday life.
- Facilitate critical reading, interpretation, and understanding of published quantitative social science research literature while deepening the student's appreciation for the empirical basis of sociology.
- Facilitate students' understanding how social science researchers use the scientific method and hypothesis testing for testing sociological theories and questions that are appropriate for quantitative analysis.
- Facilitate students in the developing their statistical literacy, including descriptive statistics, inferential statistics, bivariate measures of association, and multivariate techniques, and developing their practical skills using a statistical software program (Stata).

ACE learning outcomes in this class will be assessed by:
- Homework assignments
- Quizzes
- Exams

Format of Class
The class will consist of lectures and labs. It is highly recommended that students attend lectures and look over the book prior to class. The material is cumulative (i.e. builds on earlier ideas) and it is in the best interest of the class if everyone attends regularly and no one falls too far behind. The class will include in-class problems and activities as well as quizzes. Students are expected to come to class prepared for the day. This includes bringing a simple hand calculator to class. You must bring the calculator to every class. This will make it easier for you to participate, as we will be working practice problems together.

The labs will introduce students to Stata. They will take place in Oldfather 738. It is highly recommended that students attend the labs as basic Stata skills are necessary to complete the homework and exams.

Text and Required Supplies

- Recommended Textbook: Agresti, Alan and Christine Franklin. 2012. *Statistics: The Art and Science of Learning from Data*, 2nd or 3rd Ed. Upper Saddle River, NJ: Pearson.

- Software: the course will make use of the statistical software package Stata. Stata is available on the sociology server, which you may access from any computer on UNL's campus. We will go over how to access the server and Stata in our first lab. You do not need to buy any software for this course, although you are welcome to buy a copy for your own computer if you like. If you want a copy on your computer, you should purchase the Student version of Stata, or Small Stata, which is 38 dollars: http://www.stata.com/order/new/edu/gradplans/student-pricing/

- The following website also provides many helpful examples concerning Stata: http://www.ats.ucla.edu/stat/stata/default.htm

- The course webpage on Blackboard will be used regularly for posting material, answer keys, and for discussion.

FAQ About Stata

Q) Why do we to have to learn a statistical program?
A) The goal of this course is for you to gain experience doing data analysis. In order to actually do data analysis (i.e. answering a substantive question using real data) you must be able to use the tools of the trade. If you wanted to be a dentist, you would have to learn how to use a drill. It is no different for sociologists. Learning a statistical program is important even if you are a qualitative scholar. Qualitative scholars must be able to understand and engage with quantitative work, including the complex decisions made when variables are coded.

Q) Why do we have to learn Stata?
A) Good question, as there are many possible programs one could use to analyze data. I find Stata to be an ideal choice for this class. Stata is based on a set of simple commands. You will gain practice writing syntax (which is an important skill!) but the syntax is simple enough to pick up in a semester, unlike other programs. Stata is also widely used by sociologists, as it can handle almost any analysis you would wish to do. We will cover but a fraction of Stata's potential.

Q) How hard is Stata to learn?
A) Like any new skill, picking up Stata may be difficult at first. My experience is that students tend to get the hang of it after the second or third homework. I promise that you will be successful if you come to lab, practice, do the homework, and ask questions when you are stuck.

Q) Can I do my homework in Excel instead?
A) No, it is an important component of the class to learn Stata. The skills learned through Stata are different than Excel (also useful to learn), and you cannot pick them up using Excel.

Q) Will I ever use Stata again?
A) You are likely to use Stata in future classes or in research conducted here at UNL. You may also use Stata in a job or internship. Given that, I believe that learning Stata is a useful endeavor even if you never use Stata again. The key here is not Stata itself, but rather the base programming skills picked up while learning Stata. Once you learn Stata it will be much easier to learn *any* other program (R, SAS, python, SPSS, etc.); and that is really the goal of learning the software in the first place—to learn the logic of statistical programming so you can apply those skills to new settings and contexts. The goal, then, is to expand your ability to learn new things in the future (on the job, in grad school, etc.).

Q) Do I need to bring my computer to lab days?
A) Yes, I would recommend bringing your computer to lab days if it is laptop (otherwise that would be fairly impractical). The advantage of bringing your own laptop is that you learn how to use Stata on your own machine. For those who do not have a laptop, you can use the available computers in the lab.

Q) Can I pass this course without learning Stata?
A) Very unlikely.

Q) Are you making us learn Stata as some kind of punishment?
A) No.

Grading

1. Attendance/class participation: 10%

Attendance is highly encouraged and will contribute to your grade. One must attend class *and* actively participate to earn full marks. You are expected to come to class on time and to be actively engaged. This includes paying attention, taking notes, working on problems in groups (when prompted) and asking questions. Leaving class early will be counted the same as not attending (unless there is a valid excuse and you let me know before class that you have to leave early). Coming late will also be reflected in lower participation grades. Arriving late to class is very disruptive and is disrespectful to your fellow students.

2. Exams: Midterm Exam 20%; Final Exam 30%

There will be two exams making up half of the course grade. The second exam will be taken at the end of the course but will only cover the second half of the material (but note that this material is dependent on understanding the first half of the course…). Both exams will be take-home exams. The midterm exam will be passed out on Tuesday, March 8th and will be due the next class, on Thursday, March 10th. The final exam will be passed out on the last day of class, Thursday April 28th, and will be due on our final exam day, Thursday May 5th at noon.

3. Homework Assignments: 25%

There will be 6 homework assignments throughout the course. Each assignment will be posted on the Blackboard website and you will have one week to hand in the assignment (i.e. 7 days). The assignment will be docked 15% for each day it is late. Printing difficulties are not an excuse for turning in homework late. The assignments will require the use of Stata and provide a hands-on opportunity to use the statistical tools we talk about in class. Your homework must be printed out and handed to me at the beginning of class. If you cannot attend class, please hand in your homework in my box in Oldfather Hall. I will not accept emailed homework assignments. You may work together on the homework assignments (especially if you get stuck on a Stata problem), but you must write up the answers to the questions independently. If you simply copy another student's assignment then I will consider that plagiarism and you will receive a 0 for the assignment. In general you will be graded on the accuracy and clarity of your answers. Note that the homework will be graded based on the accuracy of your answers (as well as completeness, clarity etc.). You do not get full marks for turning it in. In general, it is a good idea to start the homework early. This way if you run into trouble you can come into class and ask me questions. Students who start the homework earlier tend to do better in the class. Note that some of the questions will require Stata, while others will not.

4. Quizzes: 15%

We will have periodic in-class quizzes. The quizzes are scheduled as part of the class (see below). You must take the quiz in class. There will be no make up quizzes. I will let you drop the lowest quiz mark, so if you miss a quiz you can simply drop it from your grade. There will be five quizzes throughout the semester. The quizzes will cover the most recent material. Most of the quizzes will be open note and open book. Occasionally we will have closed note, closed book quizzes, but even here I will provide you with the relevant formulas and tables. I will indicate prior to the quiz whether it will be open or closed notes.

Final Grade

97-100	A+	87-89	B+	77-79	C+	67-69	D+	0-59	F
93-96	A	83-86	B	73-76	C	63-66	D		
90-92	A-	80-82	B-	70-72	C-	60-62	D-		

There will be no opportunities for extra credit.

Course Schedule (Subject to Change)

Week	Date	Topic	Reading	DUE
	Part I of Course: Describing Data and Introducing Stata			
1	Tue – Jan 12	Introduction to the Course		
	Thu – Jan 14	Distributions, Graphs and Measures of Central Tendency and Spread	Chapter 1, 2	
2	Tue – Jan 19	Stata Lab: Introduction to Stata (**class in Oldfather 738**)	Stata Help	
	Thu – Jan 21	Stata Lab: Introduction to Stata (**class in Oldfather 738**)	UCLA tutorial	
3	Tue – Jan 26	Distributions, Graphs and Measures of Central Tendency and Spread	Chapter 2	
	Thu – Jan 28	Stata Lab: Summarizing Variables (**class in Oldfather 738**)	UCLA tutorial	HW 1 due
4	Tue – Feb 2	Measuring the Relationship between Two Categorical Variables	Chapter 3.1	Quiz 1
	Thu – Feb 4	Measuring the Relationship between Three Categorical Variables	Chapter 5.1-5.3	
5	Tue – Feb 9	Stata Lab: Measuring the Relationship between Categorical Variables (**class in Oldfather 738**)	UCLA tutorial	
	Thu – Feb 11	Stata Lab: Measuring the Relationship between One Quantitative and One Categorical Variable (**class in Oldfather 738**)		HW 2 due
6	Tue – Feb 16	Measuring the Relationship between Two Continuous Variables	Chapter 3.2	Quiz 2
	Thu – Feb 18	Stata Lab: Measuring the Relationship between Two Continuous Variables (**class in Oldfather 738**)	UCLA tutorial	
7	Tue – Feb 23	Bivariate Regression	Chapter 12.1-12.2	
	Thu – Feb 25	Bivariate Regression		HW 3 due
8	Tue – Mar 1	Bivariate Regression	Chapter 12.5	Quiz 3
	Thu – Mar 3	Stata Lab: Bivariate Regression (**class in Oldfather 738**)		
9	Tue – Mar 8	Exam Review and Pass out Midterm		
	Part II of Course: Statistical Inference			
	Thu – Mar 10	Samples and Populations	Chapter 1.2, 6.2, 7.2	Exam Due
10	Tue – Mar 15	Confidence Intervals	Chapter 7.1-7.2	
	Thu – Mar 17	Confidence Intervals Continued	Chapter 8.1-8.4	
11	Tue – Mar 22	Spring Break		
	Thu – Mar 24	Spring Break		
12	Tue – Mar 29	Confidence Intervals: Two Groups and Proportions	Chapter 8.1-8.4	
	Thu – Mar 31	Stata Lab: Confidence Intervals (**class in Oldfather 738**)		Quiz 4
13	Tue – Apr 5	Hypothesis Testing	Chapter 9.1-9.5	HW 4 due
	Thu – Apr 7	Hypothesis Testing	Chapter 9.1-9.5	
14	Tue – Apr 12	Hypothesis Testing: Comparing Groups	Chapter 10.1-10.3	Quiz 5
	Thu – Apr 14	Hypothesis Testing: Comparing Groups	Chapter 10.1-10.3	HW 5 due
15	Tue – Apr 19	Stata Lab: Hypothesis Testing (**class in Oldfather 738**)	UCLA tutorial	
	Thu – Apr 21	Hypothesis Testing: Relating Two Categorical Variables	Chapter 11.1-11.4	Quiz 6
16	Tue – Apr 26	Stata Lab: Hypothesis Testing: Relating Two Categorical Variables (**class in Oldfather 738**)		HW 6 due
	Thu – Apr 28	Review and Pass Out Exam		
	Thu – May 5	Final Exam due at 12:00 noon		

Course Policies

Classroom Conduct
Students are expected to be engaged in the course. Out of respect for you fellow students, I ask that cell phones be turned off and that students refrain from distracting behavior (i.e. inappropriate talking or web browsing). In general the course will be much more enjoyable if everyone is considerate of the other individuals in the room. Excessive talking or distracting behavior will not be tolerated. Students who participate in distracting behavior will receive a 0 for the day for participation, as will any student who is found texting or talking on a phone.

Academic Misconduct (or Don't Cheat)
"The maintenance of academic honesty and integrity is a vital concern of the University community. Any student found guilty of academic dishonesty shall be subject to both academic and disciplinary sanctions. Academic dishonesty includes, but is not limited to, the following: Cheating; Fabrication or Falsification; Plagiarism; Abuse of Academic Materials; Complicity in Academic Dishonesty; Falsifying Grade Reports; Misrepresentation to Avoid Academic Work." Quoted from the UNL Student Code of Conduct

Disabilities
"It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY."

If you need accommodations it is your responsibility to discuss this with me *early* on in the semester.

Exam and Paper Policy
The midterm is a take home and must be turned in on Thursday March 10th at the beginning of class. The final exam must be turned in by the end of the official exam period for the class, stipulated by the university (Thursday May 5th at noon). There will be no exams accepted after the fact unless there are extraordinary circumstances and the student has received permission from me to turn in the exam late.