

Sociology 360: Statistics for Sociologists I

Fall 2009

Lecture 3

Instructor:

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Office Hours: Thur. 2:30-4:30 p.m.

Lectures: TR 8:00a.m.-9:15a.m.
4308 Social Science

Teaching Assistant:

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Office Hours: Wed. 10 a.m.-12 p.m.

Labs :

331: Wed 7:45-9:40a.m. (6224 Social Science)

332: Wed 1:20-3:15p.m. (6224 Social Science)

Overview:

This course introduces methods of empirical social research, and how they are used to assemble, describe, and draw inference from data. Emphasis is on basic but very serviceable methods of statistical analysis for information drawn from surveys or archives.

Our coverage of statistical analysis starts simple and gets gradually more involved. We start with numerical and graphical tools to examine distributions of single variables, next move to correlation and regression to describe the relationships between a pair of variables. We also cover the basics of statistical inference for generalizing beyond a sample data.

Upon completion of the course, we hope that you will be a more informed and critical reader of academic work, news accounts and advertising materials that present statistical evidence. You should also be able to execute and present elementary statistical analyses on your own.

Prerequisites:

Sophomore standing and basic algebra skills

Required Text and Readings:

Moore, Davis S. 2007. *The Basic Practice of Statistics. Fourth Edition*. New York: W.H.Freeman. (Available at the University Bookstore.)

Recommended Texts:

Fligner, Michael A. and William I. Notz. 2006. *Study Guide for Moore's the Basic Practice of Statistics, Fourth Edition*. New York: W.H. Freeman. (Available at the University Bookstore.)

Software Resources:

We will do a substantial amount of data analysis this semester with the aid of a software package called Stata. You can access Stata in the Social Science Microcomputer classroom in 3218 Social Science or in 4218 Social Science. You will also be able to access Stata remotely from home. The TA will cover how to do this in lab. Course handouts, on-line help files, and instruction in section meetings will teach you how to use Stata gradually.

Web Resources:

The course website is available through learn@UW. If you enrolled in the course, you can access the site by going to <http://learnuw.wisc.edu> and entering your NetID and password. Once there, click on the link to SOC360 under “My Madison Courses.”

Moore’s text comes with many useful online supplements (<http://bcs.whfreeman.com/bps4e>). You may find some of them very useful (e.g., statistical applets and data sets.)

Calculators:

You will need a calculator that can do “two-variable statistics” for the homework assignment and exams (e.g., the Texas Instrument TI-36X Solar [available at the university Bookstore Digital Outpost]).

Requirements:

(1) Problem sets

Timely practice and repetition are essential to improve your comfort with and abilities in statistical analysis. Toward this end, the course requires a series of problem sets. A new problem set will be assigned every week and it will be due at the beginning of class (8:00 a.m.) on Thursday. Homework received after 8:00 a.m. on Thursday will be considered late.

(2) Exams

One of the important goals of this course is to develop your skills as an informed and critical consumer of statistical evidence. This goal will be assessed through three non-cumulative exams.

(3) Written assignment

Another important goal is to develop your skills as a producer of social research. This goal will be assessed through two written assignments. The first will be a short project in which you practice descriptive statistics and graphical display of data. The data for this assignment will be provided. The second assignment will require you to apply all the skills you have learned through the course.

(4) Attendance and participation

Preparing for Lecture:

You are responsible for reading the entire chapter for each topic, unless indicated otherwise. You will not need to bring your textbook to class.

Labs:

Labs will consist of: (a) follow-up and elaboration of materials covered in lecture sessions; (b) feedback on prior problem sets; (c) instruction in computing for upcoming problem sets; and (d) questions and review of material covered in lecture sections. Attendance at lab is optional but strongly recommended.

Grades:

| | |
|------------------------------|---------------------|
| Exams | 45% (15%, 15%, 15%) |
| Problem Sets | 20% |
| Written Assignments | 30% (10%, 20%) |
| Attendance and participation | 5% |

Extension Policy:

Assignments must be turned in on time if we are to provide prompt feedback. Credit therefore will be deducted for late assignments. You will lose 1 point out of 10 for each day an assignment is late, unless extended.

Recognizing that everyone has a complicated life and a busy schedule, we will allow you three automatic, no-question-asked, 5-day extensions on problem sets. To obtain such an extension, you must notify your TA *in advance*, in writing. Extensions for more than five days are not automatic and must be requested and granted by your TA. *You must turn in the two written assignments on time (no exception).*

Special Needs Arrangements:

To make special arrangements for testing, assignments, or other aspects of the course you must qualify for disability services through the McBurney Center. Their website has detailed instructions on how to qualify: <http://www.mcburney.wisc.edu/>. Please notify me within the first 2 weeks of class if you have or anticipate having authorization from the Center and we will be happy to make the necessary arrangement.

Academic Honesty:

As with all courses at the University of Wisconsin, you are expected to follow the University's rules and regulations pertaining to academic honesty and integrity. Students are expected to know and follow the standards outlined by the Offices of the Dean of Students. See their website (<http://www.wisc.edu/students/conduct/uws14.htm>) for a complete description of behaviors that violate the University's standards as well the disciplinary penalties and procedures.

Department Notice:

The Department of Sociology regularly conducts student evaluations of all professors and teaching assistant near the end of the semester. Students have more immediate comments, complaints, or concerns about Sociology 360 should report them to me or to the Chair or Associate Chair of the Department of Sociology.

Feedback:

I am interested in hearing your reactions to the course, and your suggestions for improvement. Please feel free to e-mail me about comments or suggestions or make an appointment to see me.

Course Schedule

NOTE: The schedule below may change. All announcements regarding schedule changes will be emailed to you or announced in lecture or lab. You are responsible for keeping up to date on these changes.

| Week | Date | Topic | Chapter | Comments |
|--|-------------|--|----------------|-----------------------------------|
| Describing One Variable Distributions | | | | |
| 1 | 9/3 | Introduction/Picturing Distributions | Ch. 1 | |
| 2 | 9/8 | Picturing Distributions (continued) | Ch. 1 | |
| | 9/10 | Describing Distributions | Ch. 2 | PS 1 distributed |
| 3 | 9/15 | Normal Distribution | Ch. 3 | |
| | 9/17 | Normal Distribution (continued) | Ch. 3 | PS 1 due; PS 2 distributed |
| Correlation and Regression | | | | |
| 4 | 9/22 | Scatterplots and Correlation | Ch. 4 | |
| | 9/24 | Regression | Ch. 5 | PS 2 due; PS 3 distributed |
| 5 | 9/29 | Regression (continued) | Ch. 5 | Written assignment 1 distributed |
| | 10/1 | Categorical Data | Ch. 6 | PS 3 due; PS 4 distributed |
| 6 | 10/6 | Review and catch up | | |
| | 10/8 | Exam 1 | | Ch. 1-6; PS 4 due |
| Data Collection | | | | |
| 7 | 10/13 | Producing Data: Experiments | Ch. 8 | |
| | 10/15 | Producing Data: Sampling | Ch. 9 | |
| Univariate Statistical Inference | | | | |
| 8 | 10/20 | Introducing Probability | Ch. 10 | Written assignment 1 due in class |
| | 10/22 | Sampling Distribution | Ch. 11 | PS 5 distributed |
| 9 | 10/27 | Confidence Intervals | Ch. 14 | |
| | 10/29 | Confidence Intervals (continued) | Ch. 14 | PS 5 due; PS 6 distributed |
| 10 | 11/3 | Significance Tests | Ch. 15 | |
| | 11/5 | Significance Tests (continued) | Ch. 15 | PS 6 due; PS 7 distributed |
| 11 | 11/10 | Review and catch up | | |
| | 11/12 | Exam 2 | | Ch. 8-11, 14-15; PS 7 due |
| 12 | 11/17 | Inference in Practice | Ch. 16 | Written assignment 2 distributed. |
| | 11/19 | Inference about a Population Mean | Ch. 18 | |
| Inference about Associations | | | | |
| 13 | 11/24 | Comparing Two Means | Ch. 19 | PS 8 distributed |
| | 11/26 | Thanksgiving (no class) | | |
| 14 | 12/1 | Inference about a Population Proportion | Ch. 20 | |
| | 12/3 | Comparing Two Proportions | Ch. 21 | PS 8 due; PS 9 distributed |
| 15 | 12/8 | Inference for Two-way Tables | Ch. 23 | |
| | 12/10 | Inference for Regression | Ch. 24 | PS 9 due |
| 16 | 12/15 | Exam 3 | | Ch 16, 18-21, 23-24 |
| | 12/18 | Written assignment 2 due by 5:00 p.m. in 2446 Social Science | | |