

Sociology 7201, Research Methods in Sociology  
Fall 2009, Tuesdays and Thursdays, 12:10 – 1:30pm, 26 Stubbs  
Instructor: Susan A. Dumais, 119 Stubbs Hall  
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Office Hours: Tuesdays, 11:00 – 12:00; Thursdays, 1:30 - 3:00  
Course website available on Moodle

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**Overview:** This course is an introduction to basic methods of statistical analysis, and how they are used to assemble, describe, and draw inferences from bodies of data.

In this course, the coverage of statistical analysis starts simple and gets gradually more involved. We start with (1) distributions of single variables, next move to (2) relationships between pairs of variables, and finally to (3) statistical control and basic multivariate analysis involving three or more variables at once. In each case we study *graphical* approaches to the display of data, *descriptive* statistics for making statements about a body of data, and *inferential* statistics for generalizing beyond a body of data to some larger population of interest. Key ideas in statistics are common to all three areas, and will be introduced early and used often.

**Objectives:** This course seeks to develop your skills as both a consumer and a producer of social research. I hope that upon completion of the course 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. This course is intended to give you the basic foundation necessary for the spring semester course Sociology 7203, Advanced Research Methods in Social Science.

**Requirements:** There will be two examinations, a midterm and a final. The final will be cumulative, emphasizing material covered after the midterm.

The course also requires a series of problem sets: some problems involve calculations on your part, while others require that you learn how to analyze data using the statistical package Stata. In some of these assignments, you will be asked to write short summaries and interpretations of findings you have obtained.

#### Required Texts and Software:

1. Agresti, Alan and Barbara Finlay. 2009. *Statistics for the Social Sciences*, Fourth Edition. Upper Saddle River, NJ: Prentice-Hall. ISBN: 978-0-13-027295-9
2. Hamilton, Lawrence C. 2006. *Statistics with Stata: Updated for Version 9*. Belmont, CA: Thomson. ISBN: 9780495109723.

These books have been ordered at the LSU bookstore and the Coop Bookstore. You may also be able to find them for lower prices at amazon.com, half.com, and other websites. There is an earlier edition of the Agresti and Finlay book (1997, Third Edition) that is similar enough to the Fourth Edition that you should be able to use it without too much trouble. I will point out

important differences between the two editions (I'll be using the Fourth Edition) as we progress through the semester.

3. I will also ask that you read a small number of chapters or research articles as background for some of your assignments. These are listed on the syllabus. I will post most of the readings on the course website. Copies of other readings will be handed out in class.

4. We will be doing a substantial amount of data analysis this semester with the aid of a software package called Stata. Stata is installed on several of the computers in the lab on the first floor of Stubbs Hall. If you plan on taking any other quantitative courses in the future or if you plan on doing quantitative research for your thesis/dissertation, it may be in your best interest to purchase a copy of Stata yourself. LSU has an agreement with Stata whereby you can purchase the software at a discount. See the website: <http://www.stata.com/order/new/edu/gradplan.html>. The Stata IC version should be adequate for most of your needs (small Stata is not a good choice). It is up to you if you want a 1-year or perpetual license, but again, if you plan on conducting quantitative research in the future, it probably makes sense to get a perpetual license. A perpetual license for IC Stata is currently \$179; a 1-year license is \$98. The version I have and the version on the lab computers is version 10; the version currently being sold on the Stata.com website is version 11.

We will use course handouts/examples, on-line help files, and instruction in class meetings to teach you how to use Stata gradually. I will post handouts in the "Handouts on Using Stata" folder of the course website. Additionally, you should rely on the required Stata book listed above.

5. You should have a hand calculator that will add, subtract, multiply, divide, exponentiate, and take square roots. This will be helpful in doing problems for the homework assignments and in-class exercises, and essential on examinations.

**Internet Resources:** This course has a website on Moodle. You should check this website regularly, as I will post the syllabus, handouts/examples, assignments, some data sets, and other notices and information on the site.

Some information about Stata is available at <http://www.stata.com/>.

#### Other Information:

1. This syllabus is subject to change based on how we progress throughout the semester.

2. **Grades.** Weights will be assigned as follows: Problem sets 32% (8 sets, 4% each); midterm exam, 32%; final exam, 36%.

3. **Problem Sets.** Assignments are due in class on the days listed in the syllabus. You must turn in hardcopies. Electronic submissions are not accepted. Assignments must be turned in on time if I am to provide prompt feedback. Credit will be deducted for late assignments; you will lose 10% for each day an assignment is late.

4. **Office hours.** Please make use of my office hours for discussions concerning exercises, examinations, papers, or other matters about the course. If necessary, I will try to arrange to meet with you at other times, but I would appreciate it if first you would make the effort to use the office hours I have set aside especially for meeting with students.

5. **Software instruction.** This course provides an introduction to Stata statistical software for data analysis, enough to get you into position to do the exercises and perform basic analyses. Time will not permit in-depth coverage of other important aspects of statistical software, including especially the mechanics of setting up and modifying data sets; you will certainly need to acquire such skills as you progress in your graduate school career.

## Course Schedule

### A. Introduction

A.1 Introductory Materials: 8/25, 8/27, 9/1

Reading: Agresti and Finlay, Chapters 1-2

Problem Set 1: Introduction, Measurement, and Sampling, Due on September 8

### B. Single Variables

B.1 Describing One Variable Distributions: 9/3, 9/8, 9/10  
(Stata training in class on 9/10)

Reading: Agresti and Finlay, chapter 3

Handouts on Stata

Marsden, Peter V., Cynthia R. Cook and David Knoke. 1996. "American Organizations and Their Environments: A Descriptive Overview." Chapter 3 in A. L. Kalleberg, D. Knoke, P.V. Marsden and J. Spaeth, *Organizations in America*. Newbury Park, CA: Sage.

Problem Set 2: Descriptive Statistics and Univariate Graphics; Due on September 15

B.2 Statistical Inference I: Probability and Sampling Distributions: 9/15, 9/17

Reading: Agresti and Finlay, chapter 4

Problem Set 3: Using the Normal Distribution; Due on September 22

B.3 Statistical Inference II: Estimation and Confidence Intervals: 9/22, 9/24

Reading: Agresti and Finlay, chapter 5

B.4 Statistical Inference III: Hypothesis Testing: 9/29, 10/6, 10/8

Reading: Agresti and Finlay, chapter 6

Problem Set 4: Hypothesis Tests and Confidence Intervals for Means; Due on October 13

October 13: Midterm Review

October 15: MIDTERM EXAMINATION (Coverage through Chapter 6, Hypothesis Testing)

## C. Relationships between Pairs of Variables

C.1 Two Categorical Variables: Crosstabulation: 10/20, 10/22, 10/27

Reading: Agresti and Finlay, chapter 8

Halle, David. 1992. "The Audience for Abstract Art: Class, Culture and Power." Pp. 131-151 in Michele Lamont and Marcel Fournier (eds.), *Cultivating Differences: Symbolic Boundaries and the Making of Inequality*. Chicago: University of Chicago Press.

Problem Set 5: Crosstabulation, Table-Reading, and Measuring Association, Due November 3

C.2 One Categorical, One Continuous Variable I: Differences of Means Tests: 10/29, 11/3

Reading: Agresti and Finlay, chapter 7

Problem Set 6: Differences of Means Tests, Due November 10

C.3 One Categorical, One Continuous Variable II: Analysis of Variance: 11/5, 11/10, 11/12

Reading: Agresti and Finlay, chapter 12

Verkuyten, Maykel. 1991. "Self-Definition and Ingroup Formation among Ethnic Minorities in the Netherlands." *Social Psychology Quarterly* 54: 280-286.

Problem Set 7: Analysis of Variance, Due November 17

## D. Statistically Controlling Alternative Explanations: Multivariate Analysis

D.1 Categorical Variables: 11/17, 11/19

Reading: Agresti and Finlay, chapter 10

Handouts on Three-Way Crosstabs

NO CLASS ON TUESDAY, NOVEMBER 24

## E. Applying What We Have Learned

### E.1 Applications: 12/1

Reading: To be announced

Topics: Choosing the right kind of analysis; critiquing others' statistical analyses (for example, journal articles); looking ahead to next semester

**Problem Set 8: Three-Way Crosstabulations and Applying What We've Learned; Due on Monday, December 7, by 4:30pm, in my mailbox**

12/3: Final exam review

12/10, 12:30-2:30pm: FINAL EXAMINATION (cumulative)