

# Quantitative Methods for Sociological Analysis I

## TTH 8:00-9:20, SSB 101

Maria Charles  
Email: mcharles@ucsd.edu  
Phone: (858) 534-2566  
Office: SSB 492  
Office Hours: Tuesday/Thursday 9:30-10:30

The goals of this course are to hone skills for: (1) designing theoretically and empirically meaningful research projects, (2) conducting quantitative analysis of sociological data, and (3) critically evaluating and interpreting empirical research results. Although quantitative methodologies are the focus of this course, you will find that many of the conceptual, analytical, and writing skills developed are applicable to qualitative research as well.

The course is designed to provide hands-on experience in the application of basic quantitative methodologies to real sociological data. You will be expected to derive meaningful interpretations from your results, and to clearly communicate what you have discovered. We will be using the statistical software package *SPSS for Windows* (Version 13.0) to analyze data taken from the "World Values Survey," the "General Social Survey," and/or other national or international sources of your choice.

### Course Outline

- I. Introduction and Definitions
- II. Descriptive Measures (distribution, central tendency, dispersion, z-scores)
- III. Making Inferences
- IV. Bivariate and Multivariate Methods
  - A. T-Test
  - B. Crosstabulations (Chi-Square and Tests of Association)
  - C. Correlation and Regression

### Assignments

There will be five required assignments: 2 exercises, and 3 short (7-10 page) research papers. *All assignments should be completed on time.* Grades will be calculated as follows:

- Exercise 1 (data definition in SPSS; compute descriptive statistics): 10%;
- Exercise 2 (statistical exercises): 10%;
- Paper 1 (using t-test): 15%;
- Paper 2 (using chi-square test): 20%;
- Paper 3 (using multiple regression): 35%;
- Class participation, including in-class presentations: 10%.

## Required Materials

### Textbook

Knoke, David, George W. Bohrnstedt, and Alisa Potter Mee. (KBM) 2002. *Statistics for Social Data Analysis. Fourth Edition*. Itasca, IL: F.E. Peacock Publishers.

### Reader:

Collins, Randall. 1979. Chapter 1. *The Credential Society: An Historical Sociology of Education and Stratification*. New York: Academic Press.

Handout: Standard Deviation and Normal Distribution.

Norusis, Marija J. 1998. *SPSS Base 10.0 User's Guide*. Chicago: SPSS Inc. Pp. 1-9, 69-87, 135-45, 205-11, 421-22, 441-47.

SPSS. 2002. *SPSS 11.5 Brief Guide*. Upper Saddle River, NJ: Prentice Hall, Pp. 87-88.

Norusis, Marija J. 1990. *SPSS/PC+ 4.0 Base Manual*, Chapter 4. Chicago: SPSS Inc.

Handout: Example of Variable Definition and Descriptive Statistics in SPSS

Handouts: Type I and Type II Errors; Probability Distribution for 20 Coin Tosses.

Handout: Monte Carlo Simulation from Irregular and Rectangular Distributions.

Handout: "Using Sampling Distributions to Test Hypotheses about Population Parameters"

Handouts: Calculating z- and t-scores.

Handouts: T-tests in SPSS.

Examples of t-tests: Kalleberg, Arne L., Barbara Reskin, and Ken Hudson. 2000. Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States." *American Sociological Review* 65:256-65. Excerpts from Kay and Hagan 1998; Lee and Brinton 1996; Ross and Mirowsky 1996.

Handouts: Crosstabs in SPSS.

Handout: Column versus Row Percentages.

Handout: "How Strong is a Relationship"

Handout: Measures of Association (Norusis 1993, Figure 10.6).

Example of tabular analysis: Wood, Geoffrey and Christine Psoulis. 2001. "Mobilization, Internal Cohesion, and Organized Labor: The Case of the Congress of South African Trade Unions." *Work and Occupations* 28:293-314.

Handouts: Scatterplots, Correlation, Regression in SPSS.

Examples of regression analysis: Langton, Nancy & Jeffrey Pfeffer. 1994. "Paying the Professor: Sources of Salary Variation in Academic Labor Markets" *American Sociological Review* 59: 236-56. Excerpt from Okamoto and England 1999.

Data Documentation and Variable Lists

- World Values Survey
- US General Social Survey
- International Social Survey Programme.

## Optional Materials

SPSS for Windows Graduate Student Package.

- The textbook and SPSS Student Package are available at the UCSD bookstore.
- The reader can be purchased from University Readers online at [www.universityreaders.com](http://www.universityreaders.com), or by phone at 800-200-3908.

## Tentative Schedule

*Week 1 (January 10 & 12):* Introduction to Data Analysis and Research Design.  
Readings: Collins; **KBM** chapter 1.

*Week 2 (January 17 & 19):* Descriptive Statistics.  
Readings: **KBM** chapter 2.

*Week 3 (January 24 & 26):* Introduction to SPSS.  
Readings: Norusis, SPSS, Norusis.

*Week 4 (January 31 & February 2):* Inferential Statistics, Hypothesis testing.  
Readings: **KBM** chapter 3; “Monte Carlo” handout.

*Week 5 (February 7 & 9):* Inferential Statistics (cont.).  
Readings: **KBM** pp. 121-128.  
*Note: Exercise #1 is due February 7.*

*Week 6 (February 14 & 16):* T-Test.  
Readings: Kalleberg et al.  
*Note: Exercise #2 is due February 14.*

*Week 7 (February 21 & 23):* Contingency Table Analysis.  
Readings: **KBM** chapter 5, and pp. 207-223.  
*Note: Paper #1 is due February 23.*

*Week 8 (February 28 & March 2)* Contingency Table Analysis (cont.).  
Readings: Wood & Psoulis.

*Week 9 (March 7 & 9):* Correlation, Simple Regression.  
Readings: **KBM** chapter 6.  
*Note: Paper #2 is due March 7.*

*Week 10 (March 14 & 16):* Multiple Regression.  
Readings: **KBM** chapter 8, Langton & Pfeffer.

*Paper #3 is due Thursday, March 23, 3:00 p.m.*