

SOCY 2061: INTRODUCTION TO SOCIAL STATISTICS, FALL 2007

-- M & W: 2-2:50 pm, HLMS 199 --

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Text: There is no required textbook for this class. All class readings will be drawn from the following website: <http://onlinestatbook.com/>. I recommend *Statistical Analysis in the Social Sciences* (McClendon) or *Statistics for the Behavioral Sciences* (Gravetter and Wallnau) if you would like to own a physical text book as a supplement.

Course Description:

A significant share of sociological research relies almost exclusively on quantitative methods (e.g., statistical analyses) to investigate social phenomena. These researchers use large national surveys, public opinion polls, and census data to document, describe, and explain a wide range of sociologically motivated research questions. As a result, students of this body of research need to have a basic understanding of statistics if they are to be active participants in the local, regional, national, and international dialog within the sociological community. The primary goal of this class is to provide each student with the requisite skills to not only understand the mainstream sociological research but also to be critical consumers of statistical information that is often presented as “factual”. Although the primary emphasis is on social research, the information and skills that you will learn in this class will be applicable to most academic and non-academic careers.

The course is divided into four sections that focus on descriptive Statistics and inferential Statistics and various applied statistical techniques. Descriptive statistics are methods that allow you to present a set of scores in a parsimonious summary form that measure individual and social characteristics (e.g., socioeconomic status, self-esteem, residential segregation). The primary concepts that we emphasize are *central tendency* (e.g., mean, mode, median) and *dispersion* (e.g., standard deviation, variance, inter-quartile range). The second section, Inferential Statistics, is the backbone of statistical reasoning and it involves making estimates about a *population* (e.g., this entire class) based on a *sample* (e.g., 10 or 12 students in the class). This process necessarily involves the invocation of the basic rules of probability and it will introduce you to hypothesis testing which is used throughout the physical, behavioral, and social sciences. In the third section of the course, we will review five important applications of statistics (e.g., Cross-Tabs, Correlation, Simple Regression, and Multivariate Regression).

Course Requirements:

Attendance: Attendance to class and recitation section is mandatory. Any changes in the course syllabus and other announcements will be made in class and students are responsible for this information. Recitation attendance and participation will count as 50 points of the overall grade.

Examinations: There will be five in-class examinations in this course (see schedule below). Each examination is cumulative. Any missed examination will result in a score of 0 and make-up examinations will be given only in the case of a documented emergency. Each examination is worth 100 points

Problem Sets: There will be 5 homework assignments in the class worth 20 points each. All of the homework assignments are due on the day of the corresponding examination. Please turn your homework in with your examination. No credit will be given for assignments turned in late.

Grades: Final grades are based on students' total point score as determined by participation and performance on examinations and homework assignments. Grades are based on a total of 650 points and are presented in the table to the right.

Communications: Email is an official form of communication. You are responsible for checking your University of Colorado official email address on a regular basis. **To send me an email, you must use SOCY2061 as the subject of your email.** This can be followed by whatever subject you'd like (e.g. SOCY2061: homework #3) but your message must start with SOCY2061. I will read and respond to email sent to me from this class only during my office hours.

Policies for Students with Special Needs

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services (DS) early in the semester so that your needs may be addressed. DS determines accommodations based on documented disabilities (303-492-8671, Willard 322, www.colorado.edu/sacs/disabilityservices)

Religious Holidays

Please contact the instructor regarding any conflicts between religious observance dates and course examinations or assignments.

Classroom Behavior and Honor Code Policies

As a result of extensive discussions with and recommendations from faculty and students, a new classroom behavior policy procedures and honor code system have been adopted by the University. Please see (<http://www.colorado.edu/policies/index.html>) and (<http://www.colorado.edu/academics/honorcode/>) for more information, respectively.

Grade	Percent	Points
A	100-95	650-618
A-	94-90	617-582
B+	89-87	581-563
B	86-83	562-537
B-	82-80	536-517
C+	79-77	516-498
C	76-70	497-452
C-	69-65	451-420
D	64-50	451-325
F	49-0	324-0

COURSE SCHEDULE

Week	Monday	Wednesday	Homework/Reading
SECTION ONE: Distributional parameters			
1	August 27: Overview: parameters and estimates	August 29: Central Tendency	III(A)
2	September 3: <i>LABOR DAY--NO CLASS--</i>	September 5: Dispersion	III(B, E, F)
3	September 10: Skewness and Kurtosis	September 12: EXAMINATION # 1 HW #1 (turn in with exam)	III(C, D)
SECTION TWO: Probability and normal distributions			
4	September 17: Probability	September 19: The normal distribution (Z scores)	V(A-D, F); VI(A-D)
5	September 24: Standardized Distributions	September 26: EXAMINATION # 2 Homework #2 (turn in with exam)	VI(E-G)
SECTION THREE: Inferential Statistics			
6	October 1: Standard Error	October 3: Confidence Intervals: means & proportions	VII(A-E); VIII(A-E4)
7	October 8: Hypothesis testing	October 10: EXAMINATION #3 Homework #3 (turn in with exam)	IX(A-G)
SECTION FOUR: Differences in means and proportions			
8	October 15: Difference in independent means	October 17: Difference in dependent means	X(A-C)
9	October 22: Testing the difference in proportions	October 24: Confidence intervals for differences in means and proportions	VIII(E5, E7)
10	October 29: Inferential statistics review	October 31: EXAMINATION #4 Homework #4 (turn in with exam)	I(D)
SECTION FIVE: Applied bivariate analysis			
11	November 5: Pearson Correlation	November 7: Significance of Pearson correlation coefficient and rank order correlation	IV(A-E); IV(E6)
12	November 12: Chi-square test of independence	November 14: Fisher Exact Probability Test	XIV(A-E)
	November 19: Fall break (no class)	November 20: Fall break (no class)	
13	November 26: Analysis of Variance (ANOVA)	November 28: ANOVA part II	XIII(A-D)
14	December 3: Bivariate regression	December 5: Test statistics, linear predictions, and standardized regression coefficients.	XII(A-F)
15	December 10: Partial correlation and the multivariate regression model	December 12: Final Examination Review	See notes
FINAL EXAMINATION: TUESDAY DEC. 18th 1:30-4:00 p.m. HW #5 DUE (turn in with final examination)			