

SYA 5455 Social Statistics & Data Analysis

Florida State University Department of Sociology

Fall 2007, meeting 9:30 to 10:45 p.m. each Monday and Wednesday in HCB 219.

Instructor: Dr. Donald Lloyd
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Hours: 11:00 a.m. to noon Monday and Wednesday; other times by appointment
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Hours: Time and location TBA

Course Objectives

Welcome! This course covers basic quantitative analysis techniques that are widely used in the social sciences. You will learn *to describe the distribution* of measured characteristics (variables) of social entities (e.g. people) and *to quantify and interpret statistical relationships* among variables as they co-vary across observations. You will also *learn about statistical inference*, which allows statements to be made about whole populations based on sample data with a known level of confidence. You will learn *how to access and analyze quantitative data* and *specify analytic tasks on a computer*, and *how to interpret the results*. By the end of the course you should be *able to conduct basic quantitative analyses* and *understand published research* based on correlation, regression and analysis of variance that may advance theory in the social sciences.

Support

Course materials and announcements will be incrementally made available on Blackboard, accessible at <http://campus.fsu.edu>. Be sure to *monitor your FSU email account* as well. You are encouraged to assist one another with technical problems by using the course discussion area on Blackboard; I will monitor the site and offer help as needed. Nevertheless all homework exercises you turn in must be *your own work* according to the FSU Academic Honor Code. I invite each student to come to my office and talk with me at least once during the semester; you are most welcome to contact me for an appointment outside of posted office hours. Further assistance will be provided through interactive exercises on the computer and on-line help with our graduate student assistant Kevin McPherson, who has considerable statistical experience.

Requirements and Evaluation

There is only one required textbook in the class: Knoke, Bohrnstedt & Mee *Statistics for Social Data Analysis*, 4ed. (KB&M). This course covers roughly the first three quarters of the text; the rest of the book will be a valuable reference tool later in your career. Beginning the second week, all assigned material must be read *before* the class

meets. These readings are listed with the course topics outlined below. Other readings may occasionally be assigned. This is a course in social statistics, not mathematics, so you are only expected to do addition, subtraction, multiplication, division, exponentiation (e.g. $X^2=X*X$), and basic algebra (e.g. $Y=a+bX$). You will need a hand-held calculator capable of these functions, as well as computing natural logarithms and powers of e ; such equipment typically sells for under \$20.

Statistical techniques are best learned by doing, so homework will include three take-home mini-projects. Evaluation is based on the 3 mini-projects (10% each), 2 in-class tests (20% each), and a final exam (30%). No special "participation" or other extra credit is allotted; attendance is mandatory. Make-up tests are possible for students with a *bona fide* reason as defined in university regulations, however such tests will differ from the version originally scheduled. Late work is strongly discouraged because it disrupts the student's progress in learning. Scores for late assignments may be discounted at a rate of 3 percent per day.

Grades in this course are meant to tell you how well you have mastered the subject, and frequent assessment should help you to improve your performance. Everyone theoretically could receive an A, which means: "You are doing very good or excellent work; you demonstrate an ability to converse and apply the major and minor concepts of the course and a willingness to put in the effort necessary to become proficient in continuing to study it in the future. Keep up the good work." A B might be interpreted as: "You are doing a good job in this course; you demonstrate understanding of the major concepts; and your work reflects an ability to apply these concepts and rules in a reasonable manner. With more time and effort you might expect to do better." A C might mean: "You exhibit satisfactory work in the course on the major concepts, but don't seem to have a good grasp of the detail and or subtleties of the content or skills."

Course grades are calculated on a 100 point scale. Letter grade equivalents are:

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

Outline of Course Topics

Aug. 27, 27	Introduction; levels of measurement	KB&M 1.1-1.7; 2.1-2.4
Sept. 3	Labor Day – University Closed	
Sept. 5	Describing distributions	KB&M 2.5-2.7
Sept. 10	Exploratory data analysis	KB&M 2.8
Sept. 12	First mini-project due in class	Review Ch. 1-2
Sept. 17	Test 1	
Sept. 19	Statistical inference: basic concepts	KB&M 3.1-3.4

Sept. 24, 26	Some useful theoretical distributions	KB&M 3.5-3.11
Oct. 1, 3	Statistical tests concerning means	KB&M 4.1-4.5
Oct. 8, 10	Describing bivariate relationships	KB&M 5.1-6.3
Oct. 15	Bivariate regression in more detail	KB&M 6.4-6.5
Oct. 17	Comparing regression equations	KB&M 6.6
Oct. 22	Second mini-project due in class; Interpreting contingency tables	KB&M 7.1-7.3
Oct. 24	Review Ch. 3-6	
Oct. 29	Test 2	
Oct. 31, Nov. 5	Introduction to multiple regression	KB&M 8.1-8.7
Nov. 7	Regression with dummy variables	TBA
Nov. 12	Veteran's Day – University closed	
Nov. 14	Strategies for multivariate analysis	TBA
Nov. 19	Third mini-project due in class	
Nov. 21	Assumptions and limitations	KB&M 8.3, Box 8.2
Nov. 26, 28	Applications of basic statistics	TBA
Dec. 3, 5	Review for cumulative Final Exam.	Review Ch. 1-8.
Thursday Dec. 13	3:00-5:00 p.m. Final Exam.	

Americans With Disabilities Act: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the: Student Disability Resource Center, 874 Traditions Way, 108 Student Services Building, Florida State University, Tallahassee, FL 32306-4167. (850) 644-9566 (voice); (850) 644-8504 (TDD); (850) 644-7164; email sdrc@admin.fsu.edu; website <http://www.disabilitycenter.fsu.edu/>

Academic Honor Policy: The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to . . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University. (Florida State University Academic Honor Policy, found at <http://dof.fsu.edu/honorpolicy.htm>.)

Religious Holidays: Students will be allowed to miss class due to observance of religious holidays but they are still responsible for all materials assigned outside and covered in class on the day(s) missed. You must talk with your instructor in advance of missing a class for religious holiday observance reasons.

Classroom Courtesy: Classroom courtesy is necessary to ensure that all students have the opportunity to learn without distractions. This means no cell phones, talking during lectures (unless recognized by the professor or discussion leader), reading newspapers, etc. during class. If you must have a cell phone to receive emergency calls about children or other family members, keep it on vibrate. Please refrain from browsing Facebook, checking e-mail, chatting online, etc. during class time.

Class Attendance: Class attendance is required. Five or more unexcused ones will result in an F grade for the course. The following and only the following absences are eligible to be excused: Religious holidays, as specified in FSU policy (see elsewhere in syllabus); absences due to representing FSU at official functions, including intercollegiate debating or varsity sports events; verified emergencies and/or medical illness. Medical illnesses are serious in nature and require continued treatment by medical professionals and/or surgical or other treatments. Colds, the flu, fatigue, and stress do not qualify as medical illnesses. If you have a chronic illness that could affect your attendance, it is imperative that you alert me to this at the beginning of class. Documentation for an absence to be excused is required. You must provide a copy of any documentation to your professor (but maintain a copy for your records). While one is not penalized for the absence of excused absences, he or she remains responsible for all content missed, including assignments, knowledge, or skills covered in missed class(es).

Incomplete Grades: Missing work is insufficient reason for a grade of Incomplete (I). An "I" will not be given except under extenuating circumstances at the instructor's discretion. Note that College of Social Science guidelines require that students seeking an "I" must be passing the course.

Syllabus Change Policy: This syllabus is a guide for the course and is subject to change with advance notice. This syllabus and other class materials are available in alternative format upon request.