STATISTICS FOR SOCIAL SCIENCE
Sociology 308, Spring 2008

Professor:	Mark A. Leach	**Class time**	M/W, 8:00a-9:40a
Office location:	Faner Hall 3423	**Class locations:**	Parkinson Lab, 0107
Office phone:	453-7623	(W, starting 4/2)	CAIRL Comp. Lab, Faner 3208
Email:	markl@siu.edu **(best way to contact me)**	**Office hours:**	M/W, 9:45a-11:45a Tues, 3p-5p Or by appointment
Soc Dept. phone:	453-2494		

Texts *(both are available in the university bookstore)*:

Chava Frankfort-Nachmias and Anna Leon-Guerrero. 2006. *Social Statistics for a Diverse Society* (4th Edition). Pine Forge Press. (ISBN 1-4129-1517-1)

OPTIONAL: Thomas W. Pavkov and Kent A. Pierce. 2007. Ready, Set, Go! A Student Guide to SPSS 11.0 for Windows (1st Edition). McGraw Hill.

Course Description: This is a beginning course in statistical methods for social scientists. The course stresses how to be intelligent and informed consumers and producers of quantitative social science research. I will teach the course through a hands-on approach to data analysis, relying on as many real-world examples as possible. This is not simply a math course. You will be required to understand much more than just formulas and computations—this course will stress the interpretation and appropriate use of quantitative analyses. As such, **your grade will be based both on the accuracy of your computations and their meaning**. Doing well means understanding what you're doing—not simply being able to calculate it correctly.

The first half of the course will cover various methods of descriptive statistics including graphical displays of data and measures of central tendency, variability and association. The latter half of the course focuses on inferential statistics, which requires knowledge of random variables and probability distributions, most notably the normal distribution. We will then delve into sampling distributions, confidence interval estimation, and several methods to test hypotheses. We will also get into the computer lab in the latter half of the semester and introduce several computer software packages that make statistical computations much easier and more manageable with larger data sets.

As you see from the description of topics, learning statistical methods involves becoming familiar with a new language. As such, my lectures will generally follow the text for consistency but do not assume that one replaces the other. I will cover issues that the text does not address and vice versa. You are responsible for all material presented in both lectures and text.

Requirements & Grading: There will be *two* midterm exams and a final exam. Homework problems sets will generally be due every two weeks. And because attendance and punctuality are proven components of success in this course, I will occasionally give a pop quiz or simply

take attendance at the beginning of class. The following is the point break-down for the course:

	Total Points
Homework Sets (6 assignments)	300
Midterm #1	200
Midterm #2	200
Final Exam	200
Quizes/Attendance	100
	1000

And the following are the ranges of total points in the course for the final grade so you can track your progress throughout the semester:

Grade	Point Range
A	850 – 1000
B	720 – 849
C	600 – 719
D	500 – 599
F	< 500

PLEASE NOTE: I cannot emphasize enough the importance of coming to see me as early as possible if you find you are having difficulty in the course. The earlier you come to see me, the better chance we will have of rectifying the problem. The content of this course builds upon itself cumulatively each week so the longer you wait to see me the less you will understand the new material each week.

Also, if you have an issue with a score you receive on an assignment or exam, please see me as soon as possible after the grade has been posted. I am not very flexible about reconsidering scores at the end of the semester.

Exams: The exams cover material presented in *both the lectures and the book*. Mastering the homework problems is essential for doing well on the exams. Many of the homework problems, however, are focused on computations and the exams will also test your conceptual understanding of the lecture and reading material. The exams are closed note and closed book, but you will be allowed to use a calculator and a one 5-inch × 8-inch index card of notes (double-sided) for the first midterm, two cards for the second midterm and three such cards for the final exam. Bringing note cards larger than this—or extra notes—will be treated as academic dishonesty. I reserve the right to collect the note cards after an exam. Students must use a traditional, stand-alone calculator during exams, not one that is part of a cellular phone, pager, or other electronic device.

Homework Problem Sets: There will be six home work problem sets assigned during the semester and will generally be due two weeks after the assignment is announced. Some find that the problems sets require lot of time. Practicing problems, however, is essential to learning and understanding statistical methods (this is why the homework is almost 1/3 of your grade). Unfortunately, for most of us there is no way around the work required to be successful. The best approach is to spread out the work across the time allotted for each assignment. If you start early, you may not be able to complete the problems right away because we will not have

covered the material in lecture, but you will have a better sense of the concepts when I cover them in class. This will also make the problems easier to understand when you go back to them a second time. I also provide ample time in class to review any problems you have trouble with. The worst approach is to start the problem sets the night before an assignment is due. "Cramming" is typically not possible in a statistics course because of the practice required.

For each problem assigned, I am much more concerned about the process of how you arrived at a particular answer or conclusion and its interpretation than the numerical answer. Therefore, *the work you show is graded* and not necessarily your final answer. I intentionally assign several odd number problems, for which the answers are provided in the back of the book, to help you understand the problems as you do them. *You will not be given credit for simply copying answers out of the back of the book*. If copying becomes problematic, I will begin to assign only even number problems. Also, you should show all your work in a clean, neat manner. Points will be deducted for messy work that I find difficult to grade.

Homework assignments are **due by 4:30p** on the day of the specified due date. You may turn in your assignment to me in class or at my office hours after class, or to the Sociology Department Office (Faner 3384), which closes at 4:30p each day. The student worker will record that you turned in the assignment and put it in my mailbox. If you slip your assignment under the office door after 4:30p, it is considered late and you run the risk of it being misplaced. Please be sure to hand it to the student worker in person. Late assignments will be accepted for two days past the due date and will be **penalized 15 percent per day**. Assignments will not be accepted past the second day after the due date. So, if an assignment is due on a Monday, it will only be accepted on Monday (with no penalty), Tuesday (with a 15-percent penalty), or Wednesday (with a 30-percent penalty). ***You are required to make and retain a photocopy of your homework before turning it in***. This is your evidence that you completed the assignment should it be lost or destroyed.

Labs: Beginning Wednesday, 4/2, we will meet in the CAIRL computer lab (Faner Hall 3208) each Wednesday for the remainder of the semester (***EXCEPT*** the last day of class, 4/30). Lab exercises will be assigned with the problems sets in the book. These assignments are intended to be straight-forward and designed to introduce you to computer software and techniques that make the statistical methods learned throughout the semester easily computed.

Ethical Conduct: You are responsible for being familiar with the University Student Conduct Code (http://www.dce.siu.edu/siuconnected/studentresources/StudentHandbook/studentconduct.html). Be warned—I have zero-tolerance toward cheating. All cases of academic dishonesty will result in a score of -0- for the assignment or exam. I fully encourage working on the homework problem sets and lab assignments in groups, however, you must turn in your own work. If you are in doubt about what consists of academic dishonesty in this course or have questions, please consult with me.

Classroom Decorum: I have an obligation to maintain a classroom environment that allows each student to learn to the best of his or her capabilities. I encourage students to ask questions and make comments in class. Therefore, I will not tolerate or permit behavior that is disruptive, distracting, or demeaning (such as critical reactions to questions). Actions that violate these

norms will be treated seriously—one warning, then you'll be asked to leave. If your cell phone must be on for medical, child care, or other reasons, please set it to vibrate, not ring.

Disabilities: Reasonable accommodations will be available to students with disabilities. In order to take advantage of available accommodations, students must contact the SIU Disability Support Services (DSS) and then submit to me written documentation of the disability and necessary accommodations by the second week of the semester.

Emergency Procedures: Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT'S website at http://www.bert.siu.edu, Department of Public Safety's website at http://www.dps.siu.edu/ (disaster drop down) and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Important Dates: Please check the following course schedule against your personal, travel, or athletic schedules—if you cannot make an exam, please drop the course and plan to take it at a later time. No early midterms or finals will be given. Per University policy, if an exam falls on a religious holiday for which your observance will prevent you from taking the exam, you must inform me at least three (3) class meetings (not days) prior to the exam and I will make appropriate accommodations. This only applies to exams. All other assignments should be turned in early if you cannot not be physically present on the date it is due. If you become sick the day of an exam, you must email me or leave a message with the department ***prior*** to the start time of class on the day of the exam *and* provide a dated note from a doctor at a later time to schedule a make-up. Messages left after the class period begins on the day of the exam will not be accepted.

COURSE TOPICS AND READINGS

All readings come from the course text, *Social Statistics for a Diverse Society,* unless otherwise noted and should be completed *prior* to the date to be discussed in lecture. This schedule is tentative and I reserve the right to change it at any time with appropriate advanced notice given in class.

Week 1. Course Overview, Intro to Statistical Methods, and Organization of Information
1/14 Intro, Ch. 1, pp. 1-22 * HW #1 assigned
1/16 Ch. 2, pp. 27-52

Week 2. Graphic Presentation and Measures of Central Tendency
1/21 MLK Holiday
1/23 Ch. 2 (cont.)

Week 3. Measures of Variability
1/28 Ch. 3, pp. 63-84 * HW #1 due, HW #2 assigned
1/30 Ch. 4, pp. 97-124

Week 4. Measures of Variability and Bivariate Relationships
2/4 Ch. 4 (cont.)
2/6 Ch. 5, pp. 135-138, 145-149, 152-164

Week 5. Bivariate Relationships and Midterm #1
2/11 Ch. 5 (cont.)
2/13 Ch. 5 (cont.) * HW #2 due

Week 6. Measures of Association and Regression
2/18 Review for Midterm, Start Ch. 6
2/20 Midterm #1

Week 7. Measures of Association and Regression
2/25 Ch. 6, pp. 177-211 * HW #3 assigned
2/27 Ch. 6 (cont.)

Week 8. Measures of Association and Regression & Normal Distribution
3/3 Ch. 6 (cont.), Ch. 7, pp. 227-230
3/5 Ch. 8, pp. 261-296

Week 9. Spring Break
3/10 No Class
3/12 No Class

Week 10. Sampling & Sampling Distributions
3/17 Ch. 8 (cont.)
3/19 Ch. 8 (cont.) * HW #3 due

Week 11. Midterm #2
3/24 Review for Midterm, Start Ch. 9
3/26 Midterm #2

Week 12. Sampling & Sampling Distributions
3/31 Ch. 9, pp. 315-335 * HW #4 assigned
4/2 Ch. 10, pp. 343-367 / LAB
Meet in CAIRL Computer Lab,
Faner Hall 3208

Week 13. Estimation with Confidence Intervals
4/7 Ch. 10 (cont.) * HW #4 due /HW #5 assigned
4/9 Ch. 11, pp. 375-395 / LAB
meet in CAIRL Computer Lab,
Faner Hall 3208

Week 14. Testing Hypotheses, one sample mean
4/14 Ch. 11 (cont.)
4/16 NO CLASS * HW #5 due (turn into Sociology Department),
HW #6 assigned

Week 15. Testing Hypotheses, difference of two sample means
4/21 Ch. 12, pp. 403-432
4/23 Ch. 12 (cont.) / LAB
meet in CAIRL Computer Lab,
Faner Hall 3208

Week 16. Testing Hypotheses, difference of two sample proportions
4/28 Ch. 12 (cont.)
4/30 Review for Final * HW #6 due

FINAL EXAM: **Wednesday, 5/7, 7:50a – 9:50a**