

The University of Texas at Austin  
School of Social Work  
**SOCIAL WORK STATISTICS**

**Course Number:** SW 318

**Unique Number:** 63060

**Semester:** Spring 2005

**Meeting Time:** Tues, Thurs 2:00-3:30

**Meeting Place:** SSW 1.214 (Information  
Technology Classroom)

**Instructor:** Michael Bergman, Ph.D.

**Office Number:** SSW 3.122a

**Office Phone:** none

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**Office Hours:** Thursday 3:30-4:30, or by  
appointment

### **Course Description**

This course is one of the two courses in research for undergraduate social work majors. Completion of the liberal arts math requirement is a prerequisite for this course. This course provides a basic introduction to the conceptual and quantitative tools used to describe and interpret data in the conduct of social work and social psychological practice and research. Students learn how to select, calculate, and interpret appropriate statistics applicable to common data analysis situations related to direct practice, administration and planning, and policy making. The course provides students with the opportunity to acquire personal computer skills in Microsoft Excel and the Statistical Package for the Social Sciences (SPSS) to calculate statistics and present results. Students are required to complete SW 318 prior to entering the major. Students majoring in social work must earn a grade of C or better in this course.

### **Course Objectives**

By the end of the course, the student should be able to:

1. Explain the logic of the research process and its relationship to social work knowledge and practice;
2. Explain, calculate, and interpret descriptive statistics including: basic terminology, scales, notations, frequency distributions, measures of central tendency, measures of dispersion, and the normal distribution;
3. Read and analyze basic charts and graphs, contingency tables, and SPSS output results;
4. Explain, calculate, and interpret inferential statistics including probability and hypothesis tests;
5. Identify and apply the correct statistical technique to the research question;
6. Understand that statistics are value neutral, but can be used to support discriminatory and prejudicial value positions contrary to the values of social work, especially against special populations (e.g., women, people of color, people with disabilities, gays and lesbians);
7. Use computer technology to compute descriptive and inferential statistics; and
8. State several examples of how statistics are used as a tool in the "real world" by social service agencies to analyze client outcomes.

## **Required Materials**

The text for this course is:

Frankfort-Nachmias, C., & Leon-Geurrero, A. (2002). Social statistics for a diverse society, 3<sup>rd</sup> edition. Thousand Oaks, CA: Pine Forge Press.

The text includes a student version of SPSS (Statistical Package for the Social Sciences) that can be installed on a PC computer. We will mainly use SPSS to do the statistical calculations needed for this course.

If you do not have a personal computer, the necessary hardware and software is available in the LRC computer lab, as well as many other computer labs on campus. There is a list of computer labs and the policies governing their use at the web site address:

<http://www.utexas.edu/computer/labs.html> . You can complete homework assignments in the Learning Resource Center (LRC) on the first floor of the School of Social Work building. LRC schedules are posted in the computer lab.

In order to use the computers in campus computer labs you need an IF (Individually Funded) account. Details about IF accounts, including how to obtain one on-line are available at the web address: <http://www.utexas.edu/cc/account/>.

Many course materials, announcements, assignments, exams, and grading will be done in BlackBoard. Through BlackBoard, the syllabus and any updates are available for downloading; datasets for problems are available for downloading; homework assignments and exams will be made available and completed online; your grades on exams and homework will be available online to you; a public bulletin board and access to email is supported for reporting problems on assignments, requesting assistance, and checking for announcements. While the University has invested additional resources in support of BlackBoard, there are still periodic outages and slow-downs. If you wait until the last minute to complete assignments, you may encounter difficulties.

## **Class Policies**

The University of Texas at Austin is proud of its students' commitment to academic integrity and their pledge to abide by it's policy on scholastic dishonesty. The tradition of scholastic honesty is maintained by the cooperation of students and faculty members. Official University policies on scholastic dishonesty are stated in Appendix C, Chapter 11 of The Institutional Rules on Student Services and Activities. These policies may be found in General Information, 2003-2004 and may also be accessed from the Student Judicial Services web site. If a student has any questions concerning the application of the rules prohibiting scholastic dishonesty in regard to a particular assignment, it is the responsibility of that student to seek clarification from the instructor of the course. Violations of the University's policy on scholastic dishonesty will result in a grade of F for the course and may result in reporting to the Dean of the School of Social Work.

As part of professional social work education, students may have assignments that involve working in agency settings and/or the community. As such, these assignments may present some risks. Sound choices and caution may lower risks inherent to the profession. It is the student's responsibility to be aware of and adhere to policies and

practices related to agency and/or community safety. Students should also notify instructors regarding any safety concerns.

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.

### **Homework Assignments**

There will be 20 homework assignments to be completed and the answers entered in BlackBoard on the computer. The purpose of the homework assignments is to give you practice solving problems with data.

Weekly homework assignments will consist of statistical questions asked about a dataset. The homework assignments will require you to use SPSS to answer the questions. When you have computed your answer, you will enter the answer to the question in BlackBoard. When you have finished the assignment and submitted it for grading, it will be graded immediately and you will receive feedback for each question on the homework.

Homework assignments will be available on the course web page at the conclusion of the class in which they are assigned and must be completed by the start of the next, at which time access to the homework assignment expires.

Each student's homework assignment will be drawn randomly from a test bank of questions. Each student's homework will contain comparable, but not identical questions. The homework assignment may be redone as many times as you wish. You will be given a different selection of questions each time you redo the assignment. You will find two identical versions of each homework assignment. Your grade for the assignment will be the higher grade on either version of the assignment. Since BlackBoard will record your grade for the last attempt, you can use the other version to retake the assignment to improve your grade.

NOTE: BlackBoard does not save your answers until you have "Submitted" the assignment. If your computer malfunctions or you become disconnected, you will have to redo the assignment.

Each student is expected to complete their homework assignments individually. While I can monitor the time you spend logged into BlackBoard, I do not have any mechanism to be certain that this expectation for individual work is satisfied. However, the format and problems on exams will be the same format as the homework problems. The homework is designed to prepare you to do well on the exams, both in terms of content and the process of entering the information into the computer. If you have a difficult time answering homework questions or using BlackBoard, your performance on exams will likely suffer.

Practice problems and a computer program to ask and grade the questions will be available on the course web site. These problems will be available at any time and can be used to learn to answer problems without relying on BlackBoard. Practice problems will be used in class and can be used to review for exams.

## **Exams**

There are four exams in this course. Exams will focus on the content in the classes since the previous exam. However, since the content in a statistics course is cumulative, there are inevitably cumulative elements to exam questions. In preparing for exams, students should focus on the content since the last exam and review the material from the previous classes which is the foundation for the current topics.

Exams will be completed on the computer in BlackBoard. Exams will be in the same format as homework assignments, and will include conceptual questions from the text as well as statistical problems to solve. Exams will be time-limited to the 75 minute class period. A student must submit their exam for grading at the end of 75 minutes. Unlike homework assignments, grades on exams will not be immediately released. Grades will be released after all students have completed the exam. At that time, students may log into their BlackBoard account and see their grade and the corrected exam.

Since BlackBoard does not save answers to questions as they are completed, each student will be given a bubble sheet to record a backup copy of their answers in case the computer malfunctions or is disconnected before the exam is completed.

All materials needed to complete the exam will be installed on the computers in the IT Classroom prior to the exam, i.e. a SPSS, the data sets to be analyzed, and a browser link in Internet Explorer to BlackBoard. No other materials may be used in completing the exam. The use of any programs or materials on floppy disks or downloaded from the internet is not permitted. The use of email during exams is not permitted. If a student has any question about what is or is not permitted during an exam, they should ask the instructor prior to doing it. Computer activity during the exam will be monitored and any violation of these policies will be treated as scholastic dishonesty and result in a grade of zero for that exam.

Exams are to be taken at the scheduled time. If a student misses an exam, they can make up the credit by conducting an independent analysis of a dataset assigned by the instructor. Completion of this analysis must be done in the computer lab or classroom in the same 1 1/4 hour time allotment allowed for the exam. The date and time for the makeup exam will be scheduled at a time that is mutually convenient to the student and the instructor.

## **Class Attendance**

Class attendance is required. Role will not, however, be taken in class. It is expected that students will attend class, where many topics are stressed or explained in better detail than text offers, and it is expected that students will only miss class for medical emergencies, doctor's appointments, family crises, personal crises, religious holidays, special events, and university sanctioned activities that may occur during the semester. Failure to attend class lectures will likely hurt your chances of receiving a high grade in this class.

## **Grading**

A student's final grade in the course will be based on homework/exam grades and class attendance.

Activity	Percent of Homework/Exam Grade
Home Work	20%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Exam 4	20%

Letter grades will be assigned according to the following scale:

A = 90.00% - 100.00% of total possible points

B = 80.00% - 89.99% of total possible points

C = 70.00% - 79.99% of total possible points

D = 60.00% - 69.99% of total possible points

F = 59.99% or less of total possible points

Point totals will not be rounded up to a higher grade. Since students have the opportunity to repeat homework assignments to improve their grade, there is ample opportunity to assure that they have sufficient extra points to secure a desired grade.

### Class Schedule

The anticipated schedule of activities for this course is listed on the next page. The instructor reserves the option to modify the schedule if deemed necessary. References to chapters are the chapters in the textbook.

Date	Readings from Text to Prepare for Class	Class Activities	Homework Assignment (due at the start of the next class)
Class 1 Tuesday, Jan 18		<ul style="list-style-type: none"> <li>• Review syllabus</li> </ul>	
Class 2 Thursday, Jan 20	Chapter 1. The What and Why of Statistics	<ul style="list-style-type: none"> <li>• Lecture on chapter 1</li> <li>• Introduction to SPSS</li> </ul>	Homework 1: Level of measurement problems
Class 3 Tuesday, Jan 25	Chapter 2. Organization of Information: Frequency Distributions	<ul style="list-style-type: none"> <li>• Lecture on Chapter 2</li> <li>• Practice Frequency Distribution Problems</li> </ul>	Homework 2: Frequency distributions – I (reading tables)
Class 4 Thursday, Jan 27	Chapter 3. Graphic Presentation	<ul style="list-style-type: none"> <li>• Lecture on Chapter 3</li> <li>• Practice Frequency Distribution Problems</li> </ul>	Homework 3: Frequency distributions – I (interpretation)
Class 5 Tuesday, Feb 1	Chapter 4. Measures of Central Tendency	<ul style="list-style-type: none"> <li>• Lecture on Chapters 4</li> <li>• Practice Central Tendency Problems</li> </ul>	Homework 4: Central tendency problems
Class 6 Thursday, Feb 3	Chapter 5. Measures of Variability	<ul style="list-style-type: none"> <li>• Lecture on Chapter 5</li> <li>• Practice Variability Problems</li> </ul>	Homework 5: Variability problems
Class 7 Tuesday, Feb 8	Chapter 9: Organization of Information and Measurement of Relationships: A Review of	<ul style="list-style-type: none"> <li>• Review for Exam 1</li> </ul>	

		Descriptive Data Analysis	
Class 8 Thursday, Feb 10	Exam 1		
Class 9 Tuesday, Feb 15	Chapter 6: Relationship between two variables (crosstabulation)	<ul style="list-style-type: none"> <li>• Lecture on Chapter 6</li> <li>• Practice Crosstabulation Problems</li> </ul>	Homework 6: Crosstabulation
Class 10 Thursday, Feb 17	Chapter 6: Relationship between two variables (elaboration)	<ul style="list-style-type: none"> <li>• Lecture on Chapter 6</li> <li>• Practice Elaboration Problems</li> </ul>	Homework 7: Elaboration
Class 11 Tuesday, Feb 22	Chapter 7: Measures of Association for Nominal and Ordinal Variables	<ul style="list-style-type: none"> <li>• Lecture on Chapter 7</li> <li>• Practice Confidence Intervals</li> </ul>	Homework 8: Lambda and gamma
Class 12 Thursday, Feb 24	Chapter 8: Bivariate Regression and Correlation	<ul style="list-style-type: none"> <li>• Lecture on Group Differences</li> <li>• Practice group differences</li> <li>• Lecture on Chapter 8</li> </ul>	Homework 9: Describing Group Differences
Class 13 Tuesday, March 1	Comparing groups on measures of central tendency and dispersion	<ul style="list-style-type: none"> <li>• Lecture on Chapter 8 (cont'd)</li> <li>• Practice regression and correlation</li> </ul>	Homework 10: r and $r^2$
Class 14 Thursday, March 3	Chapter 9: Organization of Information and Measurement of Relationships: A Review of Descriptive Data Analysis	• Review for Exam 2	
Class 15	Exam 2		

Tuesday, March 8			
Class 16 Thursday, March 10	Chapter 10: The Normal Distribution	<ul style="list-style-type: none"> <li>• Lecture on Chapter 10</li> <li>• Practice Z-scores and percentiles</li> </ul>	Homework 11: Z-scores and percentiles
March 14-19	Spring Break		
March 22	No class! Happy extended Spring Break		
Class 17 Thursday, March 24	Chapter 11: Sampling and Sampling Distributions	<ul style="list-style-type: none"> <li>• Lecture on Chapter 11</li> <li>• Practice Sampling Distributions</li> </ul>	Homework 12: Sampling Distributions
Class 18 Tuesday, March 29	Chapter 12: Estimation	<ul style="list-style-type: none"> <li>• Lecture on chapter 9</li> <li>• Practice estimation</li> </ul>	Homework 13: Point estimates and confidence intervals
Class 19 Thursday March 31	Chapter 13: Testing Hypotheses About Two Samples	<ul style="list-style-type: none"> <li>• Lecture on Logic of Hypothesis testing</li> </ul>	Homework 14: Hypothesis testing

Class 20 Tuesday, April 5	Chapter 15: Reviewing Inferential Statistics		<ul style="list-style-type: none"> <li>• Review for Exam 3</li> </ul>
Class 21 Thursday, April 7	Exam 3		
Class 22 Tuesday, April 12	Chapter 13: Testing Hypotheses About Two Samples	<ul style="list-style-type: none"> <li>• Lecture on testing mean differences</li> <li>•</li> </ul>	Homework 15: Independent samples t-test
Class 23 Thursday, April 14	Chapter 14: The Chi-Square Test	<ul style="list-style-type: none"> <li>• Lecture on Chapter 14</li> <li>• Practice Chi-square test</li> </ul>	Homework 16: Chi-square test of independence
Class 24 Tuesday,	Post hoc tests for chi-square tests	<ul style="list-style-type: none"> <li>• Lecture on post</li> </ul>	Homework 17: Post hoc tests for chi-square

April 19		hoc tests • Practice	
Class 25 Thursday, April 21	Electronic Chapter 2: Analysis of Variance	• Lecture on Electronic Chapter 2 • Practice Oneway ANOVA	Homework 18: Oneway ANOVA
Class 26 Tuesday, April 26	Post hoc tests for Oneway ANOVA	• Lecture on post hoc tests	Homework 19: Post hoc tests for oneway ANOVA
Class 27 Thursday, April 28	Electronic Chapter 1: Regression and Correlation	• Hypothesis tests in regression and correlation • Practice correlation coefficient (Pearson's r)	Homework 20: Hypothesis tests in regression and correlation
Class 28 Tuesday, May 3	Chapter 15: Reviewing Inferential Statistics		• Review for Exam 4
Class 29 Thursday, May 5	Exam 4		