

**The University of Texas at Austin
School of Social Work**

Data Analysis and Computers I

Course Number: SW 388R6
Unique Number: 61970
Semester: Fall 2011
Time: Wednesday: 8:30 to 11:30am

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BlackBoard Course Site:

https://courses.utexas.edu/webapps/portal/frameset.jsp?tab_tab_group_id=_2_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2Flauncher%3Ftype%3DCourse%26id%3D93728_1%26url%3D

Moodle Homework Site:

<http://psti.sw.utexas.edu/moodle/course/view.php?id=6>

I. Course Description

This course is designed to introduce students to fundamental concepts and statistical procedures used in social work research. It also introduces students to computer applications for data analysis and helps them develop basic skills in data file construction and manipulation, data definition, and statistical analysis. The primary focus of the course is on developing a conceptual and mathematical understanding of statistics needed for advanced work in research design, model development, model fitting and estimation, hypothesis testing, multivariate techniques, and interpretation of data. The course will begin with basic statistical concepts such as central tendency, variability, sampling distributions, statistical significance, probability, normal curve, standardized scores, hypothesis testing, statistical inference, effect size, and statistical power. By the end of the semester, specific parametric and non-parametric statistical procedures will be introduced including t-tests, ANOVA (one-way, two-way), correlation and regression, chi-square and other non-parametric statistics.

II. Course Objectives

The stated mission of the doctoral program of the School of Social Work is "to prepare its graduates for successful academic careers as social work educators whose excellence as teachers and scholars will provide intellectual leadership for the profession." Pursuit of this mission will be the overall objective of this course. By the end of the semester students will:

1. Develop basic proficiency with computer data analysis including construction of data files, SPSS for data analysis, and development of an analysis plan;

2. Understand fundamental concepts of statistical analysis;
3. Develop basic skills necessary to organize, present, and interpret data;
4. Develop the ability to evaluate and interpret the results of statistical analysis;
5. Understand the relationship between research design and statistical methods.

II. Teaching Methods

Course content will be covered using class lecture, focused discussions, computer demonstrations, and weekly homework assignments. Students are expected to ask questions, share experiences, and actively participate in class discussions. While most statistical calculation will be done on the computer, some hand calculation is inherent in statistical analysis. Pocket calculators or Microsoft Excel can be used for to compute these calculations.

Course materials and announcements will be done in BlackBoard. Homework assignments, exams, and grading of homework problems will be done in Moodle (Modular Object-Oriented Dynamic Learning Environment).

Through BlackBoard, the syllabus and any updates are available for downloading; datasets for problems are available for downloading; announcements will be posted for reporting problems on assignments.

To request help, send me an email. Usually you may anticipate a response within 24 hours. My email address is listed at the top of this syllabus. If I think your question is of general interest to the class, I may post it as an announcement unless you explicitly request that I do not post it. If you need to meet with me individually, the best method for setting an appointment is via email.

IV. Required and Recommended Texts, and Materials

De Veaux, Richard D., Velleman, Paul F., and Bock, David E.. (2011) *Stats: Data and Models*, Third Edition. Boston: Addison Wesley. (Required). An eTextbook subscription to the text is available at the following link:
<http://www.coursesmart.com/9780321698797>.

Warner, Rebecca M. (2007) *Applied Statistics: From Bivariate Through Multivariate Techniques*. Sage Publications, Inc. (Recommended, Required chapters on BlackBoard web site in folder “Warner Chapters”).

In addition, you will need access to SPSS on a PC computer and access to the Internet using either Internet Explorer, Firefox, or a comparable web browser. The current version is 18.0, but other recent versions should work as well. There is a trial version available on SPSS’s website.

Your options for access to SPSS include:

- purchase the *SPSS 19 Grad Pack* at the Campus Computer Store in the Flawn Academic Center (Note: Includes AMOS)
- license SPSS 19.0 from Software Distribution & Sales (annual license fee) located in the Student Microcomputer Facility in Flawn Academic Center
- using SPSS in the Social Work Computer Lab in the Learning Resource Center

All data sets used in this course will be available as SPSS system data files (".SAV") for downloading via the course web page in BlackBoard.

In addition to text materials, there will be links to online tutorials for each week's materials. You should review all of these links and repeat those which you find most helpful.

V. Course Requirements

Course requirements will consist of weekly homework assignments and two exams. In addition, regular class attendance is expected and students should come to class prepared to actively participate in the class. Course requirements, due dates, and their contribution to the final grade are summarized below.

Homework	30%
Midterm Exam	30%
Final Exam	30%
Class Participation	10%

Final grades for this course will be assigned using the following scale.

94.0 and Above	A
90.0 to 93.999	A-
87.0 to 89.999	B+
84.0 to 86.999	B
80.0 to 83.999	B-
77.0 to 79.999	C+
74.0 to 76.999	C
70.0 to 73.999	C-
67.0 to 69.999	D+
64.0 to 66.999	D
60.0 to 63.999	D-
Below 60.0	F

Homework assignments requiring students to use SPSS to analyze data will be made available on the Moodle site after every class. Homework problems will be objective

style questions (short answer/multiple choice questions) on the datasets provided for the course. Each homework assignment draws from a test bank of problems from which subsets of problems are randomly selected. The homework assignment may be redone as many times as you wish until the exam for that statistic. You will be given a different selection of questions each time you redo the assignment. Your grade for the assignment will be the highest grade on any attempt at the time of the exam. While you may continue to do homework problems after the exam date, the grade for the assignment will not be updated.

VI. Class Policies

The University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Policy on Scholastic Dishonesty

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. For further information, the student may refer to the Web Site of the Student Judicial Services, Office of the Dean of Students (<http://www.utexas.edu/depts/dos/sjs/>).

Class Attendance and Participation. Attendance and participation are important for effective learning. This means that students should not only attend class but should be prepared to actively participate in class discussions. At the same time, there may be occasions when students will not be able to attend class because of illness or other personal problems. In such cases, it would be appropriate for the student to notify the professor before class that they will not be in class. In the case of excessive absences, the professor reserves the right to deduct points from a student's final course grade.

Checking email, messaging, and surfing the web are not acceptable activities during class time. If it comes to my attention that you are engaged in these activities, you may be asked to remove yourself from the class.

Professional Conduct in Class

The professor expects students to act like professionals in class. This means students should arrive on time for class, be prepared to participate in the class discussion, and show respect for one another's opinions. We will not, nor should we, always agree with one another. In this environment we should be exposed to diverse ideas and opinions, and sometime we will not agree with the ideas expressed by others. However, the professor does require that students engage one another with respect and professionalism.

Religious Holidays

By UT Austin policy, students must notify the professor of a pending absence at least fourteen days prior to the date of observance of a religious holy day. If the student must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, the professor will give the student an opportunity to complete the missed work within a reasonable time after the absence.

Publication style manual. The Publication Manual of the American Psychological Association is the style manual adopted by the School of Social Work. All papers prepared for this class should conform to the APA style. A summary handout of this manual is available in Student Services. The complete manual is available in the Learning Resource Center. You can also find on-line assistance with electronic reference guidelines at: APAStyle.org.

Conditional admission. Students who were admitted into the PhD program on a conditional basis are not able to take an incomplete for this course if the conditions for admission are still in place.

Documented Disability Statement

Any student who requires special accommodations must obtain a letter that documents the disability from the Services for Students with Disabilities area of the Division of Diversity and Community Engagement (471-6259 voice or 471-4641 TTY for users who are deaf or hard of hearing). Present the letter to the professor at the beginning of the semester so that needed accommodations can be discussed. The student should remind the professor of any testing accommodations no later than five business days before an exam. For more information, visit <http://www.utexas.edu/diversity/ddce/ssd/>.

Use of E-Mail for Official Correspondence to Students

Email is recognized as an official mode of university correspondence; therefore, students are responsible for reading their email for university and course-related information and announcements. Students are responsible to keep the university informed about changes to their e-mail address. Students should check their e-mail regularly and frequently—daily, but at minimum twice a week—to stay current with university-related communications, some of which may be time-sensitive. Students can find UT Austin’s policies and instructions for updating their e-mail address at <http://www.utexas.edu/its/policies/emailnotify.php>.

Safety

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 notify the professor regarding any safety concerns.

Behavior Concerns Advice Line (BCAL)

If students are worried about someone who is acting differently, they may use the Behavior Concerns Advice Line to discuss by phone their concerns about another

individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit <http://www.utexas.edu/safety/bcal>.

Emergency Evacuation Policy

Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation:

- Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.
- If you require assistance to evacuate, inform the professor in writing during the first week of class.
- In the event of an evacuation, follow the professor's instructions.
- Do not re-enter a building unless you're given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.

VII. Schedule

The following schedule is the weekly sequence of topics for the semester. The instructor reserves the right to make adjustments to the topic sequence if deemed necessary. Any changes will be made prior to the date of the class.

Class Date	Text	SPSS Tutorials	Solving Problems in SPSS	Homework Problems
Class 1 Aug 24	Chapter 1. Stats Starts Here Chapter 2. Data	Introduction Reading Data Using the Data Editor Examining Summary Statistics for Individual Variables	The Role of Statistics in Research Doing Homework Problems in Moodle Level of Measurement	Level of Measurement
Class 2 Aug 31	Chapter 3. Displaying and Describing Categorical Data	Working with Output Examining Summary Statistics for Individual Variables Crosstabulation Tables Case Studies: Base System: Summary Statistics Using Frequencies Case Studies: Base System: Analysis of Cross-classifications Using Crosstabs	Frequency Distributions Contingency Tables	Frequency Distributions Contingency Tables

Class 3 Sep 7	Chapter 4: Displaying and Summarizing Quantitative Data Chapter 5: Understanding and Comparing Distributions	Examining Summary Statistics for Individual Variables: Summary Measures for Scale Variables Case Studies: Base System: Summary Statistics Using Frequencies: Using Frequencies to Study Scale Data Case Studies: Base System: Summary Statistics Using Descriptives Case Studies: Base System: Exploratory Data Analysis	Central Tendency and Variability Comparing Central Tendency and Variability	Central Tendency and Variability Comparing Central Tendency and Variability
Class 4 Sep 14	Chapter 5: Understanding and Comparing Distributions Chapter 6: The Standard Deviation as a Ruler and the Normal Model	Case Studies: Base System: Exploratory Data Analysis	Outliers and Re-expressing Data Normal Distribution and the Empirical Rule	Outliers and Re-expressing Data The Normal Distribution and the Empirical Rule
Class 5 Sep 21	Chapter 7: Scatterplots, Association, and Correlation	Case Studies: Base System: Bivariate Correlations	Correlation of Quantitative Variables	Correlation of Quantitative Variables
Class 6 Sep 28	Chapter 8: Linear Regression	Case Studies: Base System: Linear Regression	Correlation and Regression Simple Linear Regression	Simple Linear Regression
Class 7 Oct 5	Chapter 9: Regression Wisdom Chapter 10: Re-expressing Data: Get It Straight!		Satisfying Regression Assumptions	Satisfying Regression Assumptions (Due October 19)

Midterm Exam					
Class 8 Oct 12					
Class 9 Oct 19	Chapter 18. Sampling Distribution Models Chapter 21. More About Tests Chapter 23. Inferences About Means Chapter 24. Comparing Means Chapter 25. Paired Samples and Blocks	Case Studies: Base System: T Tests	One-sample T-Test of a Population Mean Independent Samples T-Test Paired Samples T-Test	One-sample T-Test of a Population Mean Independent Samples T-Test Paired Samples T-Test	
Class 10 Oct 26	Chapter 26. Comparing Counts	Crosstabulation Tables: Significance Testing for Crosstabulations Case Studies: Nonparametric Tests: Chi-Square Test	Chi-square Goodness-of-Fit Test Chi-square Test of Independence	Chi-square Goodness-of-Fit Test Chi-square Test of Independence	
Class 11 Nov 2	Chapter 27. Inferences for Regression (excluding section on Logistic Regression)	Case Studies: Linear Regression	Inferences in Simple Linear Regression	Inferences in Simple Linear Regression	
Class 12 Nov 9	Chapter 28. Analysis of Variance Chapter 29. Multifactor Analysis of Variance	Case Studies: Base System: One-Way Analysis of Variance	One-way Analysis of Variance Two-factor Analysis of Variance	One-way Analysis of Variance Two-factor Analysis of Variance	

Class 13 Nov 16	Warner, Chapter 10. Adding a Third Variable: Preliminary Exploratory Analyses Warner, Chapter 11. Multiple Regression With Two Predictor Variables Analyses		Adding a Third Variable Multiple Regression with Two Predictors	Adding a Third Variable Multiple Regression with Two Predictors
Class 14 Nov 23	Warner, Chapter 12. Dummy Predictor Variables and Interaction Terms in Multiple Regression Analyses		Dummy Coding Regression Variables Dummy Predictor Variables and Interaction Terms	Dummy-coding Regression Variables Dummy Predictor Variables and Interaction Terms
Class 15 Nov 30	Chapter 30. Multiple Regression			
TBA	Final Exam			