The University of Texas at Austin
School of Social Work

Data Analysis and Computers II

Course Number: SW 388R7
Unique Number: 62820
Semester: Spring 2012
Time: Wednesday: 8:30am to 11:30am
Place: SSW 1.214
Instructional Technology Classroom

Faculty: Jim Schwab
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Office Hours: Wednesdays, 11:30 to 12:30pm, or by appointment

BlackBoard Web Site: https://courses.utexas.edu/webapps/blackboard/execute/courseMain?course_id=_110557_1
Moodle Web Site: http://psti.sw.utexas.edu/moodle/course/view.php?id=5

I. Course Description

This course is designed to build upon the concepts and procedures introduced in Data Analysis and Computers I, to enable students to do a more thorough job of data analysis by introducing multivariate statistical procedures into their repertoire of statistical techniques. The primary focus is on using the SPSS statistical package for calculating multivariate statistics and the utilization of the statistical output in research findings.

II. Course Objectives

1. To understand how the analysis of data derives from the statement of a research problem or hypothesis and the availability of empirical data.
2. To understand how to conduct a variety of statistical analyses, including testing of statistical assumptions, data transformations, and validation of statistical findings.
3. To understand how to present and interpret the results of statistical analyses.
4. To be able to design a data analysis strategy that answers a research question or hypothesis, including specifications for data elements, requirements of the statistic, and limitations to the interpretation.

III. Teaching Methods

Course content will be covered using class lecture, focused discussions, computer demonstrations, and regular homework assignments involving data analysis exercises and computer applications. 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 hour. 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

The required text for the course is:

Hair, Joseph F., Jr; Black, William C.; Babin, Barry J.; and Anderson, Rolph E. *Multivariate Data Analysis*, Seventh Edition. Upper Saddle River, New Jersey: Prentice Hall. ISBN 0-13-813263-1.

In addition, you will need access to version 19.0 of SPSS on a PC computer and access to the Internet using either Internet Explorer, Firefox, or a comparable web browser. If you do not have a personal computer, the necessary hardware and software are available in the LRC computer lab in the School of Social Work.

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 large test bank from which a subset 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

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.

Religious holy days sometimes conflict with class and examination schedules. If you miss an examination, work assignment, or other project due to the observance of a religious holy day you will be given an opportunity to complete the work missed within a reasonable time after the absence. It is the policy of The University of Texas at Austin that you must notify each of your instructors at least fourteen days prior to the classes scheduled on dates you will be absent to observe a religious holy day.

Scholastic Dishonesty. The University of Texas at Austin is proud of its students' commitment to academic integrity and their pledge to abide by its policy on scholastic

dishonesty. The tradition of academic integrity is maintained by the cooperation of students and faculty members. Official University policies on scholastic dishonesty are stated in the university General Information 2002-2003, Appendix C, Chapter 11, Institutional Rules on Student Services and Activities. These policies may also be found online by clicking on the following link: General Information 2005-2006. They may also be accessed from the Student Judicial Services web site. This site provides detailed information about the university's policies regarding academic integrity and standards of conduct. Students are encouraged to review this page and to become familiar with these policies.

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 and the Dean of the Graduate School.

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 MSSW program on a conditional basis are not able to take an incomplete for this course if the conditions for admission are still in place.

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 also notify instructors regarding any safety concerns.

Accommodations for students with disabilities. The University of Texas at Austin provides, upon request, appropriate academic accommodation for any student with a documented disability (physical or cognitive). For information about academic accommodations, students should contact the Office of the Dean of Students, Services for Students with Disabilities at 471-6259 (voice) or 471-4641 (TTY for users who are deaf or hard of hearing). Information is also available online at: http://deanofstudents.utexas.edu/ssd/. Students are asked to notify the professor of any accommodations they may need prior to the end of the second week of class.

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	Topic/Readings	PowerPoint	Homework Problems
Class1: January 18	• Chapter 1, Overview of Multivariate Methods, pages 1-30. • Chapter 2, Examining Your Data, pages 33 – 64.	• Homework Problems in Moodle • Level of Measurement • Missing Data Analysis	• Level of Measurement • Missing Data Analysis
Class 2: January 25	• Chapter 2, Examining Your Data, pages 65 – 89.	• Forcing Listwise Exclusion of Cases Missing Data • Testing the Assumption of Normality • Transforming Metric Variables • Identifying Univariate Outliers • Testing the Assumption of Linearity • Identifying Bivariate Outliers • Testing the Assumption of Homoscedasticity for a Metric Independent Variable • Testing the Assumption of Homoscedasticity for a Nonmetric Independent Variable • Incorporating Nonmetric Data with Dummy Variables • Detecting Outlier and Satisfying Assumptions	• Detecting Outliers and Satisfying Assumptions

Class 3: February 1	• Chapter 3, Exploratory Factor Analysis, pages 91-150.	• Principal Component Analysis – Basic Relationships	• Principal Component Analysis – Basic Relationships
Class 4: February 8	• Chapter 3, Exploratory Factor Analysis, pages 91-150.	• Principal Component Analysis – Validity, Outliers, and Reliability	• Principal Component Analysis – Validity, Outliers, and Reliability
Class 5: February 15	• Chapter 4, "Multiple Regression Analysis, pages 155-234.	• Multiple Regression Analysis – Basic Relationships	• Multiple Regression Analysis – Basic Relationships
Class 6: February 22	• Chapter 4, "Multiple Regression Analysis, pages 155-234.	• Multiple Regression – Complete Analyses	• Multiple Regression – Complete Analyses
Class 7: February 29	• Chapter 4, "Multiple Regression Analysis, pages 155-234.	• Multiple Regression – Sequential Models • Multiple Regression – Statistical Models	• Multiple Regression – Sequential Models • Multiple Regression – Statistical Models
Class 8: March 7	Midterm Exam		
Class 9: March 21	• Chapter 6, Logistic Regression: Regression with a Binary Dependent Variables, pages 317-343.	• Logistic Regression and Odds Ratios • Binary Logistic Regression – Basic Relationships	• Binary Logistic Regression – Basic Relationships
Class 10: March 28	• Chapter 6, Logistic Regression: Regression with a Binary Dependent Variables, pages 317-343.	• Binary Logistic Regression – Complete Analysis	Binary Logistic Regression – Complete Analysis
Class 11: April 4	• Chapter 6, Logistic Regression: Regression with a Binary Dependent Variables, pages 317-343.	• Binary Logistic Regression – Sequential Models • Binary Logistic Regression – Statistical Models	• Binary Logistic Regression – Sequential Models • Binary Logistic Regression – Statistical Models

Class 12: April 11	• Chapter 6, Logistic Regression: Regression with a Binary Dependent Variables, pages 317-343.	• Multinomial Logistic Regression – Basic Relationships	• Multinomial Logistic Regression – Basic Relationships
Class 13: April 18	• Chapter 12, Structural Equations Modeling Overview, pages 611-665.	• TBA	• TBA
Class 14: April 25	• Chapter 13, Confirmatory Factor Analysis, pages 668-705. • Chapter 14, Testing Structural Equations Models, 707-731.	• TBA	• TBA
Class 15: May 2	• Hierarchical Linear Modeling	• TBA	• TBA
TBA	Final Exam		