**SOCI 5304, Section 001 – SOCIAL STATISTICS Fall 2015**

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| Professor: Bob Kunovich  Office: 430A University Hall  Mailbox: 430 University Hall  E-mail: Kunovich@uta.edu  Office hours: M&W 1:00-2:00 PM  and by appointment | Class time: Mondays 2:00-4:50 P.M.  Class location: UH 13  Class number: 80304  Blackboard: elearn.uta.edu |

**Course Description**

This course provides a graduate-level introduction to the use of multivariate statistics in the social sciences. We will begin by reviewing univariate and bivariate descriptive and inferential statistics. Topics include the organization and presentation of data; measures of central tendency and variability; populations, samples, and sampling distributions; and estimation and hypothesis testing. The course focuses on multivariate descriptive and inferential statistics – ordinary least squares multiple regression and binary logistic regression in particular. You will calculate statistics with the help of a calculator and statistical software (i.e., Microsoft Excel and SPSS – Statistical Package for the Social Sciences). Prerequisites: three hours of undergraduate statistics.

**Student Learning Outcomes**

Upon completion of the course, students will be able to: (1) identify strengths and weaknesses in existing statistical research, (2) identify appropriate statistical techniques for particular research questions (bivariate and multivariate), (3) calculate and interpret descriptive and inferential statistics (bivariate and multivariate), (4) describe fundamental statistical terms including central tendency, variability, association, and inference, and (5) use statistical software (SPSS) to manage and analyze data.

**Required Materials**

**Book**

Linneman, Thomas J. 2014. *Social Statistics: Managing Data, Conducting Analyses, Presenting Results* (2nd edition). New York: Routledge. ISBN: 978-0-415-66147-8.

**SPSS**

The Statistical Package for the Social Sciences (SPSS) is available in some public computing labs on campus.  See the OIT web page for lab locations and hours.  Although you may use SPSS in these labs, some prefer to install SPSS on their own computer.  Purchasing the software is quite expensive, but it is possible to rent SPSS for a reasonable price (approximately $45 for 6 months; see: <http://www.onthehub.com/spss/>).  If you choose to rent the software, the "statistics base grad pack" is all that would be needed for this course.  Please note that we will NOT be using the student version of SPSS because it limits the number of variables and cases and does not allow the use of syntax.

**Data**

We will be using data from several sources.  The data files are available for download from the class web page in Blackboard.  Do not wait to access the data until the last minute.  You should assume that you will have trouble and will need help.

**Course Requirements and Grading**

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| Homework assignments\* | Percentage |
| 1 | 10 |
| 2 | 10 |
| 3 | 20 |
| 4 | 20 |
| 5 | 20 |
| Final exam | 20 |
| Total | 100 |

\* Due dates are listed in the course calendar at the end of this syllabus.

**Homework assignments** - There are 5 homework assignments, which involve completing problems using SPSS, Microsoft Excel, and/or a calculator and writing up the results. It is essential that you complete these assignments on time, which I define as at the beginning of class on the specified due date. If you do not turn in an assignment at the beginning of class on the specified due date, I will deduct 10% from your final assignment grade (so don’t come late). Also, I will only accept the late assignment until the following Class. If you do not turn in an assignment by the following Class, you will receive a 0. I will only make an exception to this policy under extreme conditions (i.e., a death in the immediate family, an illness or accident requiring immediate medical attention, an automobile accident on the way to class, and a court appearance). Documentation of the cause of the missed assignment must be presented in writing within one week of the due date. Do not penalize yourself twice by skipping class if your assignment is not complete. I do not accept faxed assignments. I suggest that you make a copy of your completed assignment for your records.

I encourage you to submit a draft of your assignments to me for feedback. You are allowed to make corrections to your work before submitting it for a final grade. Please keep in mind, however, that I am busy too so there must be some limitations: 1) you may submit one draft per assignment and 2) I will only provide feedback if you submit the draft before 8:00 AM on the Friday before it is due.

I recognize that it is very easy to share SPSS syntax with your classmates. You are certainly allowed to work together to complete the assignments. Under no circumstance, however, is it appropriate for you to give your syntax to another person so that they can complete their assignment (doing so will result in a zero for everyone involved). If you are confused in any way about where the line is between working together and cheating, please ask for clarification.

**Exam** - The final exam may involve a combination of multiple choice questions, short answer questions, essay questions, and calculation problems. You will be asked to use SPSS to complete portions of the exam. The exam will be take-home and you will have one week to complete it. You must work independently to complete the exam – that is, you may not work together. Any and all questions should be directed to me. I will not provide feedback on the exam except for checking the accuracy of your SPSS output.

The Exam is due Monday, December 14 BY 4:50 p.m. I will consider it late at 4:51 p.m. (10% off). If you turn in the exam on Tuesday, I will take off 20%, 30% on Wednesday, etc. I will only make an exception to this policy under extreme conditions (i.e., a death in the immediate family, an illness or accident requiring immediate medical attention, an automobile accident on the way to class, and a court appearance). Documentation of the cause must be presented in writing within one week of the due date.

**Attendance:** At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students’ academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have elected to take attendance but will not factor attendance into the grade. Although attendance is not required, it is strongly encouraged.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Title IX:** The University of Texas at Arlington is committed to upholding U.S. Federal Law “Title IX” such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX).

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule* 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is immediately to the right. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Student Support Services**:UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**My Assumptions and Suggestions**

You are graduate students and I expect you to perform at a graduate level. By this, I mean that I expect you to take responsibility for your learning. I will certainly assist you in this process. I assume, however, that you will attempt difficult problems before seeking my help.

Reading assignments should be completed prior to the assigned date. Reading is essential because assignments may contain material not covered in the lectures. Reading the material in advance will also help you to better understand the lectures.

This is a very difficult course. You will succeed in this course if you complete the readings and assignments by the due dates, attend class regularly, and ASK QUESTIONS when you don’t understand. I encourage you to make frequent use of my office hours. The best way to prepare for class is to complete the readings on time and to review your notes from the previous class.

You will receive a numeric grade for each assignment (e.g., a 93%). I use the full grade distribution when evaluating assignments: A, B, C, D, and F. You cannot afford to skip any assignments in this course; doing so will result in a very poor grade.**Course Calendar (dates are subject to change)**

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| **Dates** | **Topics** | **Readings** |
| **Review of descriptive and inferential statistics** | | |
| **08/31** | Introduction to the course  Introduction to SPSS: Acquiring, entering, and analyzing data  Descriptive statistics: Frequency distributions and graphs | Chapters 1 & 2 |
| **09/07** | Labor Day Holiday – No Class |  |
| **09/14** | Descriptive statistics: Central tendency and variability  Data screening: missing data, outliers, and normality  Data transformations: recoding and computing variables | Chapter 3 |
| **09/21** | **HW #1 due**  Inferential statistics: Probability, the normal distribution, and sampling distributions  Inferential statistics: Estimation and hypothesis testing | Chapter 5 |
| **Review of bivariate relationships** | | |
| **09/28** | Cross-tabulation, chi-square, and measures of association for nominal and ordinal variables | Chapter 4 |
| **10/05** | **HW #2 due**  The difference in means test and analysis of variance (ANOVA) | Chapter 6 |
| **10/12** | Bivariate correlation and regression | Chapters 7 & 8 |
| **Multivariate Statistics** | | |
| **10/19** | **HW #3 due**  Introduction to multiple regression:  Intercept, slopes, standard errors, t tests, confidence intervals,  standardized slopes  R-squared, the F test  reporting results (tables) | Chapter 10 |

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| **10/26** | Introduction to Multiple Regression (continued)  Multiple Regression:  Nominal and ordinal independent variables | Chapter 11 |
| **11/02** | Multiple Regression:  Nominal and ordinal independent variables (continued) | Chapter 9 |
| **11/09** | **HW #4 due**  Multiple Regression:  Nonlinear relationships | Chapter 15 |
| **11/16** | Multiple Regression:  Nonlinear relationships (continued)  Interaction effects | Chapter 12 |
| **11/23** | Multiple Regression:  Interaction effects (continued)  Regression Assumptions | Chapter 16 |
| **11/30** | Regression Assumptions (continued) |  |
| **12/07** | **HW #5 due**  Regression models for nominal dependent variables | Chapter 13 |
| **12/14** | **Final Exam Due by 4:50 PM** |  |

**Additional Resources**

**Fun Statistics Books** (there is such a thing…really…I’m not joking)

Best, Joel. 2001. *Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists*. Berkeley: University of California Press.

Gonick, Larry and Woollcott Smith. 1993. *The Cartoon Guide to Statistics*. New York: Harper Collins Publishers.

Huff, Darrell. 1954 [1982, 1993]. *How to Lie With Statistics*. Illustrated by Irving Geis. New York: W.W. Norton & Company.

Kaplan, Michael and Ellen Kaplan. 2006. *Chances Are…: Adventures in Probability*. New York: Penguin Books.

Knapp, Thomas R. 1996. *Learning Statistics Through Playing Cards*. Thousand Oaks: Sage Publications.

Salsburg, David. 2001. *The Lady Tasting Tea: How Statistics Revolutionized Science in the Twentieth Century*. New York: AW.H. Freeman/Owl Book, Henry Holt and Company.

**Introductory Statistics Books**

Blalock, Hubert M., Jr. 1960 [1972, 1979]. *Social Statistics*. New York: McGraw-Hill Publishing Company.

\* Dietz, Thomas and Linda Kalof. 2009. *Introduction to Social Statistics: The Logic of Statistical Reasoning*. Wiley-Blackwell.

Frankfort-Nachmias, Chava and Anna Leon-Guerrero. 2006. *Social Statistics for a Diverse Society* (Fourth Edition)*.* Thousand Oaks, CA: Pine Forge Press.

Jack Levin and James A. Fox. 1997. *Elementary Statistics in Social Research*. New York: Longman.

**Mathematics Review**

Hagle, Timothy M. 1996. *Basic Math for Social Scientists: Concepts*. Thousand Oaks: Sage Publications.

Hagle, Timothy M. 1996. *Basic Math for Social Scientists: Problems and Solutions*. Thousand Oaks: Sage Publications.

**Multiple Regression**

Allison, Paul D. 1999. *Multiple Regression: A Primer.* Thousand Oaks: Pine Forge Press.

Berk, Richard A. 2003. *Regression Analysis: A Constructive Critique*. Thousand Oaks: Sage.

\* Hamilton, Lawrence C. 1992. *Regression with Graphics: A Second Course in Applied Statistics*. Duxbury Press.

McClendon, McKee L. 2002. *Multiple Regression and Causal Analysis*. Waveland Press.

**Other Books**

\* Field, Andy. 2005. *Discovering Statistics Using SPSS*. London: Sage.

Gujarati, Damodar N. 2003. *Basic Econometrics* (4th edition). Boston: McGraw Hill.

\* Hoffmann, John P. 2004. *Generalized Linear Model: An Applied Approach*. Boston: Pearson.

Kennedy, Peter. 1998. *A Guide to Econometrics* (4th edition). Cambridge: MIT Press.

\* Tabachnick, Barbara G. and Linda S. Fidell. 2007. *Using Multivariate Statistics* (5th edition). Boston: Pearson.