



Course POEC 5313.521 – DESCRIPTIVE & INFERENCE STATISTICS
Professor Dr. Timothy M. Bray
Term 12 Week Summer Session, 2006
Meetings Monday 6:00 pm – 10:00 pm, GR 3.606

Professor's Contact Information

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Office Hours Mondays, 5:00 pm to 6:00 pm, and by appointment

Other Information

General Course Information

Pre-requisites, Co-requisites, & other restrictions SOCS 3305, or equivalent.
WARNING! You *must* be able to do math at a college algebra level. If you cannot, and you do not seek remedial assistance, it is likely that you will fail this course! If you doubt your ability, see me. Many errors on tests and assignments arise from improper execution of basic algebra: order of operations, powers, roots, and equations. DO NOT FEAR! Remedial help *is* available, so there's no need to drop this course. Just *be sure* of your abilities before we start.

Course Description This course is an introduction to data analysis, statistics, and regression. The only prerequisite is a sound foundation in algebra. The heart of the course is a rigorous introduction to statistical inference: sampling theory, confidence intervals, and hypothesis tests. The final section of the course covers regression analysis, which is developed in a fairly non-technical way, with an emphasis on interpretation of regression results, using examples from recent research.

Learning Outcomes The student will become acquainted with common statistics used in the social sciences, and will learn to compute these basic statistics as appropriate for the data at hand. Most importantly, the student will become an educated consumer of statistical information, with the ability to apply what is learned in class to statistical information presented in everyday life and in the course of education in the social sciences. In addition, the student will become familiar with the computer tools used to complete basic and advanced statistical analyses in the social sciences.

Required Texts & Materials

Suggested Texts, Readings, & Materials

- Agresti and Finlay, *Statistical methods for the Social Sciences*, 3rd Edition, Prentice-Hall, 1997
- Hamilton, *Statistics with Stata: Updated for Version 9*, Thomson, 2004
- Kranzler, *Statistics for the Terrified*, 3rd Edition, Prentice Hall, 2002
- **Calculator:** While we won't be working with large sets of numbers, the involved math will be sufficiently complex to require a calculator. Sophisticated, expensive graphing or programmable calculators are not necessary, and will be of no use to you. Simple arithmetic functions, as well as the ability to take square roots and raise numbers to powers will be helpful.
- **Software:** One goal of this course is to familiarize you with the

software often used in graduate education to complete simple and sophisticated quantitative analyses. For this class (and many others in the School of Social Sciences), this is **Stata**. The latest version of Stata is available in the School of Social Sciences computer labs (GR 3.206 and GR 3.602). If you can afford it, or if you plan on continuing your statistical and methodological education in the School of Social Sciences, you may purchase your own copy for home / office use under UTD's "GradPlan" arrangement with Stata, which affords you a significant discount on your purchase. For information, and to order, visit <http://www.stata.com/order/new/edu/gradplans/gp-direct.html>. Either "Small Stata" or "Intercooled Stata" will meet the needs of this course.

- **Statistical Data:** Various problem sets and in-class examples will make use of electronic datasets. These Stata-formatted datasets will be made available to you via the WebCT site for this class.
- **Internet:** This class will make extensive use of **WebCT** for posting grades and resource materials, and this will require that you activate your NetID. **WebCT** is accessible at <http://webct.utdallas.edu>. If you have difficulty, see http://www.utdallas.edu/distlearn/students/webct_login.htm or call the help desk at (972)883-2911.

Assignments & Academic Calendar

Week	Material
1 – 5/15	Introduction, Data, and Descriptive Statistics (Ch. 1, 2, & 3)
2 – 5/22	Descriptive Statistics cont'd (Ch. 3)
3 – 5/29	NO CLASS – MEMORIAL DAY
4 – 6/5	Probability, Sampling, and the Normal Distribution (Ch. 4) Problem Set A Due
5 – 6/12	Probability, Sampling, and the Normal Distribution cont'd (Ch. 4)
6 – 6/19	Confidence Intervals and Hypothesis Tests (Ch. 5, 6, & 7) Problem Set B Due
7 – 6/26	MIDTERM EXAM
8 – 7/3	NO CLASS – INDEPENDENCE DAY
9 – 7/10	ANOVA and Categorical Measures of Association (Ch. 12, 8)
10 – 7/17	Linear Regression and Multiple Regression (Ch. 9, 10, & 11)
11 – 7/24	Multiple Regression cont'd (Ch. 10, 11) Problem Set C Due
12 – 7/31	FINAL EXAM

Course Policies

Grading (credit) Criteria Grades in this class come from your performance on quizzes, the final exam, and the final project. Grades are structured as follows:

1 Midterm	45%
3 Problem Sets	10%
1 Final Exam	45%
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Total	100%

Letter grades will be assigned on the following point scale.

90% and above	A
80% through 89%	B
70% through 79%	C
Below 70%	F

Open Book Policy

In the real world, your employer will not ask you to perform statistical calculation “without referring to your notes;” neither will I. **Your quizzes and the final exam will be open note / open book.** Resist the temptation to think these will be easy. Open book tests are generally harder because the answer is not in the book. While you may rely liberally on your notes and text for exams and quizzes, you may not rely on your neighbor (see Cheating).

Showing Your Work & Partial Credit (Sloppiness)

All assignments, quizzes, and exams done for this class must show all steps (i.e., all calculations). **To receive any credit for an answer, all work must be shown. If you only provide the “final” answer, you will not receive any credit for the answer. If I cannot read your answer, follow the steps that you have taken, and clearly see how you arrived at your answer, you will not receive any credit for the answer.**

Provided you have shown your work, your answer will be considered correct if it is within rounding error of the answer I have calculated on the key. Incorrect answers receive no credit. Partial credit is not given unless a particular item shows a partial credit breakdown. Partial credit for wrong answers is given in only one case, that of “serial” questions, in which your answer to one question is used in another. If you get the first question wrong, you will get the second one wrong, too. **Showing your work will enable me to see that you only got the second question wrong because of your errors in the first one, and you will receive full credit for that question.**

Make-up Exams

Arrangements to take a quiz or exam outside of the regularly scheduled time must be made *prior* to the test. This rule applies whether you intend to miss the quiz for personal reasons, academic reasons, or sanctioned school events. If you demonstrate sufficient justification for rescheduling, I’ll work with you to find a mutually beneficial time. If you wait to contact me until after I’ve given the exam or quiz, you’ll need some evidence of your prior incapacitation, through no fault of your own, that prevented you from complying with this policy. Missing a quiz or the final exam will result in a quiz or exam score of 0. Makeup exams, while covering the same material, may differ in design and organization from the in-class exam. I reserve the right to change this policy, offering a single makeup time for all students, if I believe students are abusing this privilege.

Extra Credit

Grades in this class are based on the work that you do. There will be **NO** end of semester extra-credit assignments made on an individual-student basis. This does not preclude extra-credit opportunities that present themselves on occasional quizzes or exams.

Late Work

Late work will not be accepted.

Class Attendance

Class attendance is essential. It is also your responsibility. Whether or not you attend, **you** are responsible for all material delivered in class. This will probably include: deviations from the published text, notification of errors in the text, rescheduled or cancelled tests, announcement of extra credit opportunities, etc. You can avoid many headaches by checking with a friend (or me) to see what you missed. Remember, this is a summer session class. If you miss one class, it’s like missing 1.5 to 2 weeks during the regular semester.

Student Conduct and Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not

receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

**Student
Grievance
Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

**Incomplete
Grades**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

**Disability
Services**

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:
The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy

The University of Texas at Dallas will excuse a student from class or other required

Days

activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

**Off-Campus
Instruction and
Course Activities**

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean.

These descriptions and timelines are subject to change at the discretion of the Professor.