



EPPS 2302 - Methods of Quantitative Analysis in the Social and Policy Sciences

Fall 2018, Monday & Wednesday, 5:30 – 6:45 pm, GR 2.530

Instructor Contact Information

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Office hours: Monday & Wednesday, 3 pm – 5 pm, by appointment

Course Description and Objectives

The course introduces basic concepts and methods of statistical analysis used in different fields of social and policy science research to better understand human relationships and the impacts of government action on them. Topics include data description, using probability to assess the reasonableness of claims about the world based on sample data, exploring cause-effect interactions through regression models, and application of software to ease visualization and calculation. Students completing this course will be good consumers of statistical information and have a solid foundation for pursuing further study of quantitative analysis.

At the end of the course, students will be able to:

- Describe and visualize data.
- Understand and apply basic statistical concepts such as a population, a sample, a sampling distribution, a probability distribution.
- Formulate hypotheses and examine them appropriately.
- Understand how to use regression analysis.
- Gain a working understanding of statistical software.

Required Materials

Textbook: Sullivan, Michael. *Statistics: Informed Decisions Using Data*, Pearson Publishing, 2012 (4 th Edition). ISBN: 978-0321757272.

Stata/IC: Stata is a command and menu-driven software package for statistical analysis. It is required that you purchase your own copy of Stata for use on your computer in class and at home. To order a six-month license of Stata/IC for \$45, please visit: <https://www.stata.com/order/new/edu/gradplans/student-pricing/> Note that Stata is also available in all EPPS computer labs.

Calculator: A basic calculator that can raise numbers to a power is required.

Course Expectations and Format

Class sessions will include lectures, discussion, and in-class exercises. Lectures are intended to supplement the readings, not to replace them.

Quizzes: Out of eight quizzes that you will take over the semester, six best will count toward your final course grade. Quizzes are open book, open note (but not open internet browser or email). No make-up quizzes will be administered.

Problem Sets: Three problem sets (denoted as **PS** in the schedule below) will incorporate elements from lectures, readings, and Stata sessions. The problem sets must be submitted on eLearning by 5:30 pm on the due day. Assignments turned in after the due date will be penalized by 10 percentage points for the first day and by additional 5 percentage points for each following day.

Final Exam: The final exam will be comprehensive and is open book, open note (but not open internet browser or email). Students completing all eight quizzes can exempt themselves from the final exam, if they choose, by applying the two uncounted quizzes toward their final course grade. This option is only open to students who complete all eight quizzes. A make-up exam will only be given in rare cases of documented circumstances beyond your control (e.g., illness supported by a note from the student health center).

Grading Policy

Student course grade will be determined as follows:

- 1) Six best quizzes, for a total of 50%
- 2) Three problem sets, for a total of 30%
- 3) Final exam, worth 15%.
- 4) Participation in class activities, for a total of 5%.

A+ 97% – 100%	A 93% – 96%	A- 90% – 92%
B+ 87% – 89%	B 83% – 86%	B- 80% – 82%
C+ 77% – 79%	C 73% – 76%	C- 70% – 72%
D+ 67% – 69%	D 63% – 66%	D- 60% – 62%

Course Schedule

The schedule provided below serves as a guideline for the semester. As we proceed, we may discover that some topics take a bit longer than expected to cover while others take less time. We may also add or alter a few of the topics along the way to accommodate student interest. Required readings associated with each topic are listed on the schedule and should be read prior to each class.

Week	Date	Topic	Reading/Assignment
1	August 20 August 22	Introduction to the course Research design and sampling	Ch. 1.1-1.5
2	August 27 August 29	Visualization of data Descriptive statistics I	Ch. 2.1-2.2 Ch. 3.1-3.4
3	September 3 September 5	No class – Labor Day Probability I	Ch. 5.1-5.2 Quiz #1
4	September 10 September 12	Probability II Discrete probability distributions	Ch. 5.3-5.4 Ch. 6.1-6.3 PS #1 due
5	September 17 September 19	Normal probability distributions I Normal probability distributions II	Ch. 7.1-7.4 Quiz #2
6	September 24 September 26	Sampling distributions Estimating parameters	Ch. 8.1-8.2 Ch. 9.1-9.4 Quiz #3
7	October 1 October 3	Hypothesis testing I Hypothesis testing II	Ch. 10.1-10.4 Quiz #4
8	October 8 October 10	Inferences of two samples Inferences of two samples	Ch 11.1-11.4 PS #2 due
9	October 15 October 17	Scatter diagrams and correlation Scatter diagrams and correlation	Ch. 4.1 Quiz #5
10	October 22 October 24	Analysis of variance I Analysis of Variance II	Ch. 13.1
11	October 29 October 31	Least squares regression I Least squares regression II	Ch. 4.2-4.3 Quiz #6
12	November 5 November 7	Applied regression analysis I Applied regression analysis II	Ch. 14.1-14.3
13	November 12 November 14	Categorical data I Categorical data II	Ch. 12.1-12.2 Quiz #7 PS #3 due
14	November 19 November 21	No class - Thanksgiving Break No class – Thanksgiving Break	
15	November 26 November 28	Nonparametric statistics I Nonparametric statistics II	Ch. 15.1-15.6 Quiz #8
16	December 3 December 5	Final Review In-class Final – open books, open notes	

Additional Course Information

You are encouraged to form study groups to review the material for the quizzes, problem sets, and the final exam. However, you must work on problem sets individually and submit your own answers, based on your own understanding of the material.

Students often seem intimidated, put off by or downright fearful of statistics. This is a loss for everyone involved in the teaching and learning process. This course is meant to be a very gentle introduction to quantitative reasoning and analysis. Statistics as a discipline is concerned with the collection, analysis, and interpretation of data, as well as effective communication and presentation of results relying on data. Data are collected and reported everywhere at all times across all fields of inquiry. Knowledge of statistics is valuable because it provides you with the necessary tools and conceptual foundations for extracting and analyzing information intelligently.

Attendance: You are expected to attend class on a regular basis. Regular attendance and active participation will certainly help you succeed in this course. If you are unable to attend class, I strongly encourage you to obtain class notes, announcements, and handouts as soon as possible and talk with me if you need additional clarification.

Disability Accommodations: Please contact me as soon as possible if you require special accommodations. The Office of Student AccessAbility (OSA) is located in the Student Services Building, suite 3.200. They can be reached by phone at (972) 883-2098 or by email at disabilityservice@utdallas.edu. I will gladly work with you and the OSA to make sure these accommodations are made.

Technical Support: If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

UT Dallas Syllabus Policies and Procedures: The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Instructor.