



EPPS 6313 - INTRODUCTION TO QUANTITATIVE METHODS

School of Economic, Political and Policy Sciences, Spring 2016

Time and location: Tuesday, 7:00-9:00 pm, FO 1.502

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Office hours: by appointment

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Course Description and Objectives

The course introduces students to fundamental methods of statistical analysis in social sciences. It offers a review of measures of descriptive statistics, probability theory, hypotheses testing, analysis of variance, and simple linear regression. The course concludes with an introduction to multiple regression.

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

- Construct and visualize descriptive measures for variables of different types
- Understand and apply fundamental statistical concepts such as population, sample, sampling distribution, probability, probability distribution.
- Estimate confidence intervals
- Test hypotheses (Z-test, T-test, F-test, Chi-square test)
- Conduct basic analysis of variance
- Build a linear regression model in Excel and Stata and interpret regression output
- Appreciate statistics and enroll into the next statistics course willingly (EPPS 6316)

Course Expectations and Format

This course requires active student participation in the classroom and conscientious work outside the classroom. Doing the assigned readings and completing homework assignments are the most critical tasks of a student. A scholarly attitude, reflected in diligence, engagement, and respect for opinions of others is an integral requirement for the course.

Each class session is structured to include lecture material, discussion, and in-class exercises. Lectures are intended to supplement the readings, not to replace them. Students are assigned weekly readings and homework after in-class presentations of a new topic.

Required Readings

BLS - Berenson, M., Levine, D., & Szabat, K. (2014). Basic Business Statistics (13th ed.).
Boston, MA: Pearson. ISBN: 978-0-321-87002-5.

W - Wheelan, C. (2013). Naked Statistics: Stripping the Dread from the Data. New York, N.Y.:
Norton. ISBN: 978-0-393-34777-7 (paperback).

Course Schedule

Week	Topic and Readings	Assignment
Week 1 – January 12	Introduction to the course and each other	
Week 2 – January 19	BLS: Ch 1 Defining and Collecting Data, sec. 1.1-1.5 Ch 2 Organizing and Visualizing Data, sec. 2.1-2.7 W: Chapter 1 W: Chapter 7	
Week 3 – January 26	BLS: Ch 3 Numerical Descriptive Measures, sec. 3.1-3.6 W: Chapter 2 W: Chapter 3	HW 1 due
Week 4 – February 2	BLS: Ch 4 Basic Probability, sect 4.1-4.5 W: Chapter 4	HW 2 due Lab handed out
Week 5 – February 9	BLS: Ch 5 Discrete Probability Distributions, sec 5.1- 5.4 W: Chapter 5 (including Chapter 5 ½) W: Chapter 6	HW 3 due
Week 6 – February 16	BLS: Ch 6 Normal and Other Continuous Distributions, sec. 6.1-6.6	HW 4 due
Week 7 – February 23	BLS: Ch 7 Sampling Distributions, sec. 7.1-7.4	Lab due
Week 8 – March 1	BLS: Ch 8 Confidence Intervals, sec. 8.1-8.5, 8.8 W: Chapter 8	HW 5 due
Week 9 – March 8	In-class Exam 1 – open books, open notes	HW 6 due

Week 10 – March 15	No class – Spring Break	
Week 11 – March 22	BLS: Ch 9 Hypothesis Testing: One-sample Tests, sec. 9.1-9.6 W: Chapter 9 W: Chapter 10 Stata: Tutorial 1	HW 7 due
Week 12 – March 29	BLS: Ch 10 Hypothesis Testing: Two-sample Tests, sec. 10.1-10.5 Stata: Tutorial 2	HW 8 due
Week 13 – April 5	BLS: Ch 11 Analysis of Variance, sec.11.1, 11.2 BLS: Ch 12 Chi-square and Nonparametric Tests, sec.12.1, 12.2 Stata: Tutorial 3	HW 9 due
Week 14 – April 12	BLS: Ch 13 Simple Linear Regression, sec. 13.1-13.9 W: Chapter 11 W: Chapter 12 Stata: Tutorial 4	HW 10 due
Week 15 – April 19	BLS: Ch 14 Multiple Regression, sec 14.1-14.8	HW 11 due
Week 16 – April 26	In-class Exam 2 – open books, open notes	

Grading

Presentation of a current event * & discussion of Wheelan **	100 points
Class participation	100 points
Laboratory assignment	100 points
In-class exams (2 @ 100 points)	200 points
Homework assignments (10 best out of 11 @ 50 points)	500 points
Total	1000 points

Final grades will be assigned based on the following correspondence of earned points to letter grades:

A	1000 - 930	B-	799 - 760
A-	929 - 900	C+	759 - 720
B+	899 - 840	C	719 - 680
B	839 - 800	F	680 or below

** Current event*

On the first day of class, you will sign up for an in-class presentation of a news article that makes use of statistical information. In the presentation, you are expected to summarize the article briefly and comment on the quality and usefulness of the statistics it uses. Questions that you may want to answer include but are not limited to the following. Where do the data for the news article come from? If the article is based on survey data, what sampling method was used to collect them? Are the presented numbers credible? Are they useful? How do they improve our understanding of the social/economic/political issue in question? Could the data collection or the presentation of results be improved? Good news article outlets include [Gallup](#), [Wonkblog](#), [the Economist](#). The expected presentation time is 5-7 minutes. Please post a link to your current event on eLearning under *Current Events* prior to presenting your work in class. If you would like to use PowerPoint slides, please post them on eLearning next to the news article link.

*** Discussion of Wheelan*

On the first day of class, you will sign up for leading an in-class discussion of a chapter from *Naked Statistics* by Charles Wheelan (2013). On the day of your presentation, you will discuss and debate the main ideas of the chapter and examples that the author uses to illustrate them. Each discussion leader will prepare three questions on the reading and post them on eLearning under *Wheelan*. Each discussion leader will ask only one of their three questions in class. Students for answering these questions will be drawn from the audience randomly. The goal of this assignment is for us to begin using statistical concepts in academic discussions as well as to improve our understanding of the concepts by discussing their interpretations by Wheelan.

Course Policies

Academic Integrity

The value of an academic degree depends on the absolute integrity of the work done by a student. Therefore, I expect you to demonstrate the highest standard of individual honor in your work. If you have any questions on what constitutes academic dishonesty, please do not hesitate to ask me. To learn more about the University's policies that apply to students who engage in academic dishonesty, please go to <http://go.utdallas.edu/syllabus-policies>.

Use of Electronic Devices

You are welcome to take notes on your laptops or tablets and are expected to use a computer for course assignments. Please note, however, that taking notes in the old-fashioned way (by hand in your notebook) may be conducive to a better understanding of the material. Please be respectful of your colleagues and remember to keep your cell ringer off during class time.

Attendance, Late Work, and Missed Exams

Regular class attendance is important for succeeding in the course. EPPS 6313 is a graduate course therefore I will not take attendance. However, if I notice your frequent absences, they may affect your grade because they demonstrate a lack of commitment and engagement with the material. No late homework will be accepted, no make-up exams will be administered. Any exceptions owing to special circumstances may only be arranged on the basis of medical or other formal documentation.

Other University Policies

University policies on course conduct, student discipline, academic integrity, e-mail use, course withdrawals, grievance procedures, incomplete grades, disability services, and religious holidays fully apply in this course. For a review of the policies, see <http://go.utdallas.edu/syllabus-policies>.

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