



## **EPPS 6313 - INTRODUCTION TO QUANTITATIVE METHODS**

**School of Economic, Political and Policy Sciences, Fall 2018**

Time and location: Thursday, 7:00-9:45 pm, GR 3.402B

Professor: Dr. Evgenia Gorina

E-mail: [egorina@utdallas.edu](mailto:egorina@utdallas.edu)

Office: GR 2.322

Office hours: by appointment

### **Course Description and Objectives**

The course introduces students to fundamental methods of statistical analysis in social sciences. It offers students 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 basic statistical concepts such as a population, a sample, a sampling distribution, a probability distribution.
- Test hypotheses (Z-test, T-test, F-test, Chi-square test).
- Estimate confidence intervals.
- Conduct basic analysis of variance.
- Build a linear regression model and interpret regression output.
- Appreciate statistics and enroll into their 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 of the course.

Class sessions are 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.

**Course Schedule**

<b>Week</b>	<b>Topic and Readings</b>	<b>Assignment</b>
<b>Week 1</b> – August 23	Introduction to the course and each other	
<b>Week 2</b> – August 30	<b>BLS: Ch 1</b> Defining and Collecting Data, sections 1.1-1.5 <b>Ch 2</b> Organizing and Visualizing Data, 2.1-2.7	Group project handed out
<b>Week 3</b> – September 6	<b>BLS: Ch 3</b> Numerical Descriptive Measures, 3.1-3.6	HW 1 due
<b>Week 4</b> – September 13	<b>BLS: Ch 4</b> Basic Probability, 4.1-4.5	HW 2 due
<b>Week 5</b> – September 20	<b>BLS: Ch 5</b> Discrete Probability Distributions, 5.1- 5.4	HW 3 due
<b>Week 6</b> – September 27	<b>BLS: Ch 6</b> Normal and Other Continuous Distributions, 6.1-6.6	HW 4 due
<b>Week 7</b> – October 4	<b>No class</b>  <b>Friday, October 5 from 6 pm to 8:30 pm - Midterm in the Testing Center– open books, open notes</b>	HW 5 due
<b>Week 8</b> – October 11	<b>BLS: Ch 7</b> Sampling Distributions, 7.1-7.4  <b>W: Ch 1-7 - Discussion</b>	Wheelan Ch 1-7
<b>Week 9</b> – October 18	<b>BLS: Ch 8</b> Confidence Intervals, 8.1-8.5, 8.8  Stata: Tutorial 1	HW 6 due  Group project due

<b>Week 10 –</b> October 25	<b>BLS: Ch 9</b> Hypothesis Testing: One-sample, 9.1-9.6 Stata: Tutorial 2	HW 7 due
<b>Week 11 –</b> November 1	<b>BLS: Ch 10</b> Hypothesis Testing: Two-samples, 10.1-10.5 Stata: Tutorial 3	HW 8 due
<b>Week 12 –</b> November 8	<b>BLS: Ch 11</b> Analysis of Variance, 11.1, 11.2 <b>Ch 12</b> Chi-square Test, 12.1, 12.2 Stata: Tutorial 4	HW 9 due
<b>Week 13 –</b> November 15	<b>BLS: Ch 13</b> Simple Linear Regression, 13.1-13.9 Stata: Tutorial 5	HW 10 due
<b>Week 14 –</b> November 22	<b>Thanksgiving Break</b>	
<b>Week 15 –</b> November 29	<b>BLS: Ch 14</b> Multiple Regression, sec 14.1-14.8 <b>W: Ch 8-12</b> - Discussion	HW 11 due Wheelan Ch 8-12
<b>Week 17</b> December 6	<b>In-class Final Exam – open books, open notes</b>	

**Grading**

Current event *		50 points
Class participation & discussion of Wheelan **		100 points
Group Project***		150 points
Exams (2 @ 100 points)	H	200 points
Homework assignments (10 best out of 11 @ 50 points)		500 points
<b>Total</b>		<b>1000 points</b>

*\* 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. You are expected to create a presentation where you summarize the article briefly, present statistical information professionally, and comment on the quality and usefulness of this statistical information. When presenting your current event, you are welcome to consider answering the following questions. What is the topic of the current event and why is it relevant? Where do the data for your current event come from? If the news article is based on survey data, what sampling method was used to collect them? Are the presented numbers credible? What do we learn from them? How do they improve our understanding of the social/economic/political issue in question? Could data collection or the presentation of the results be improved? [Gallup](#), [Wonkblog](#), [the Economist](#) are only a few examples of the news outlets that feature articles backed up by statistical analysis. The expected presentation time is 5 minutes and cannot exceed 7 minutes. Please post a link to your current event and your PPT presentation on eLearning under *Current Events* prior to presenting your work in class.

*\*\* Discussion of Wheelan*

On the first day of class, you will sign up for leading the discussion of a chapter from *Naked Statistics* by Charles Wheelan (2013). Discussion leadership involves asking the audience 2-3 questions that would allow us as a group to discuss new knowledge we have gained from the chapter. The discussion days for Chapters 1-7 are October 11 (Week 8) and for Chapters 8-12 - November 29 (Week 15). After you sign up for this assignment, please coordinate discussion leadership with other students responsible for the same chapter. You may work as a group and agree on the questions that each of you will ask. Each of you is responsible for posting your 2-3 questions on eLearning under *Wheelan* in advance of your discussion leadership day. Note that the ultimate goal of this assignment is for you to reinforce your understanding of statistical concepts. Students asking and answering questions will receive participation credit.

*\*\*\* Group Project*

The Group Project will expose you to the process of primary data collection and analysis while also honing your team management skills. Specific instructions will be handed out on August 30.

Final grades for the course will be assigned using the following scale:

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

## 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 your work to demonstrate the highest standard of individual honor. 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) is 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 your success. EPPS 6313 is a graduate course therefore I will not take attendance. However, please note that you frequent absences may affect your participation grade if they hinder your in-class engagement with the material. No late homework will be accepted, no make-up exams will be administered. Any exceptions owing to special circumstances may 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>.

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

**Don't hope to succeed - plan to succeed.**

<b>Week</b>	<b>Presentations, exams, etc.</b>	<b>Notes</b>
<b>Week 1</b> – August 23		
<b>Week 2</b> – August 30		
<b>Week 3</b> – September 6		
<b>Week 4</b> – September 13		
<b>Week 5</b> – September 20		
<b>Week 6</b> – September 27		
<b>Week 7</b> – October 4	<b>Midterm</b>	
<b>Week 8</b> – October 11		
<b>Week 9</b> – October 18		
<b>Week 10</b> – October 25		
<b>Week 11</b> – November 1		
<b>Week 12</b> – November 8		
<b>Week 13</b> – November 15		
<b>Week 14</b> – November 22	<b>Thanksgiving Break</b>	
<b>Week 15</b> – November 29		
<b>Week 16</b> – December 6	<b>Final</b>	