



Course EPPS 7313: Descriptive and Inferential Statistics
Professor Dohyeong Kim, Ph.D
Term Fall 2016
Meetings Wednesday, 7-9:45pm, Room GR 3.402A

Professor's Contact Information

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General Course Information

Pre-requisites & other restrictions	The topics discussed in this course are inherently mathematical. Students taking this course should be very comfortable with college algebra. While they will not be used extensively, calculus and linear algebra will be useful. Students who do not know calculus, or who feel less comfortable with mathematics, are encouraged to take the algebra-based version of this course, EPPS 6313, no later than August 29 th .
Course Description	This course is designed to prepare students for the advanced quantitative methodology courses required of advanced degree students. The foundation of the course consists of descriptive statistics and probability. 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 is an introduction to regression analysis, with an emphasis on interpretation of regression results, using examples from recent research. This course is part of a two semester sequence; the second semester is EPPS 7316, which is a more advanced and detailed treatment of regression analysis and related topics.
Learning Outcomes	Students will obtain a clear understanding of descriptive statistics and statistical inference. Students will also have opportunities in practicing various statistical exercises with real-world data.
Required Texts	Irwin Miller and Marylees Miller. <i>John E. Freund's Mathematical Statistics with Applications</i> , 8th edition. Upper Saddle River, NJ: Pearson, 2012. (M&M)
Supplementary Texts	Alan Agresti and Barbara Finlay. <i>Statistical Methods for the Social Sciences</i> , 4 th edition. Upper Saddle River, NJ: Pearson, 2009. (A&F)
Computing	<i>Stata</i> , version 13 or 14, is the official software for the class, but any recent version will work nearly as well. <u>You do not need to buy Stata.</u> It is installed in the Computer Lab in Green Hall. However, if you wish to use Stata on your own equipment, a special discounted version will be available to students through the "Stata Campus GradPlan." You may get a six month license for "Small Stata" for a cheaper price, but it will not handle the sizes of datasets which you would need to work with for your own research later. Moreover, if you plan to take EPPS 7316 in the second semester, it would make sense to order Stata/IC (annual or perpetual license). For more info, visit http://www.stata.com/order/new/edu/gradplans/gp-direct.html .

Other Requirements	<p>A <i>hand calculator</i> is a necessity. It does not have to be fancy, but it is useful to have the following functions: $\ln(x)$, $\exp(x)$, $x!$, and y^x (logarithms, exponents, factorials, and powers). Usually any calculator described as “scientific” will have these functions. For this class, graphing capability and programmability will not be needed.</p> <p>The course web site on eLearning (elearning.utdallas.edu) serves several purposes. Mainly, it is a place to download lecture notes, assignments, practice questions, etc. Second, there is a discussion board where you can post questions and/or comments. Third, you can use it to send email to some or all of the other students in the class, arrange study groups, etc.</p>
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Assignments & Academic Calendar

These are the planned readings, test dates, and assignment due dates. Always check the online version in eLearning for updates to the schedule.

Date	Topic/Text	Assignments
August 24	Introduction: Overview and Requirements M&M Appendix A	
August 31	Stata Guide Session Handout	
September 7	Descriptive Statistics: Basics A&F Chapter 3-4 (Handout)	
September 14	Calculus Refresher Handout	<i>Quiz #1</i>
September 21	Probability Theory: Fundamentals M&M Chapter 1-2	<i>Quiz #2</i> PS #1 Given
September 28	Probability Distributions/Densities M&M Chapter 3	<i>PS #1 Due</i>
October 5	<i>Midterm Exam #1</i>	
October 12	Mathematical Expectation M&M Chapter 4	PS #2 Given
October 19	Special Probability Distributions and Densities M&M Chapter 5-6	<i>PS #2 Due</i>
October 26	Sampling Distributions M&M Chapter 8 and A&F Sections 4.4-4.5	<i>Quiz #3</i>
November 2	Point and Interval Estimation M&M Chapters 10-11 and A&F Chapter 5	
November 9	Hypothesis Testing (1) M&M Chapter 12-13 and A&F Chapters 6-8	PS #3 Given
November 16	Hypothesis Testing (2) M&M Chapter 12-13 and A&F Chapters 6-8	<i>PS #3 Due</i>
November 23	<i>Fall Break: No Class</i>	
November 30	Regression, Correlation, ANOVA: Preview M&M Chapter 14 and A&F Chapters 9-12	
December 7	<i>Midterm Exam #2</i>	
December 12-14	<i>Final Exam (Take-home: Stata Project)</i>	

Course Rules and Policies

Quizzes and Problem Sets	The best way to learn the material presented in this course is to keep practices and work on various problems. Thus, there will be three in-class quizzes and three problem sets (see the schedule above for exact due dates). Your answers to the problem sets must be prepared in MS Word 2007 or 2013 format, and <i>submitted as a hard copy in class.</i> Except in unusual circumstances, late assignments will be penalized 10 points per day.
Exams	There will be two midterm exams and the final exam. The dates are indicated on the schedule below. All tests are <i>open-book, open-note</i> . A calculator is a necessity, hopefully one with which you are familiar. <i>Laptop computers are not permitted during the test, nor any device that can send or receive text messages, email, etc.</i>
Grading Criteria	<p>Grades will be assigned as follows: Letter grades will be determined based on the overall course average, rounded to the nearest whole number. The grade brackets are as follows: A: 93-100 A-: 90-92 B+: 87-89 B: 83-86 B-: 80-82 C+: 77-79 C: 70-76 F: 0-69 (The university does not allow A+, C-, or D grades for graduate work.)</p> <p>In determining the course average, assignments will be weighted as follows: In-class quizzes: 3 @ 5 percent each, 15 percent in total Problem Sets: 3 @ 10 percent each, 30 percent in total Midterms: 2 @ 20 percent each, 40 percent in total Final exam (Stata project): 15 percent</p>
Incomplete	Generally speaking, the material in this course is best learned as a single unit. I will grant incompletes only in cases where a substantial change in life circumstances occurs that is beyond the control of the student, and only with appropriate documentation. Furthermore, by university policy, an incomplete can only be granted when 70 percent of the coursework has been completed at a passing level.
Study Groups	You are encouraged to form a regular study group. Many students over the years have found the study groups to be very helpful. Study groups are permitted and encouraged to work on the problem sets together. However, <i>each individual student should write up his or her own answer to hand in, based on his or her own understanding of the material. Do not hand in a copy of another person's problem set, even a member of your own group.</i> Writing up your own answer helps you to internalize the group discussions and is a crucial step in the learning process.
Comet Creed	<p><i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i></p> <p><i>"As a Comet, I pledge honesty, integrity, and service in all that I do."</i></p>
UT Dallas Syllabus Policies and Procedures	<p><i>The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.</i></p> <p><i>Please go to http://go.utdallas.edu/syllabus-policies for these policies.</i></p>

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