EPPS 2302.002 – Methods of Quantitative Analysis in the Social and Policy Sciences

Green Hall (GR) 3.402A&B – MW 11:30am-12:45pm - Fall 2015

Instructor Contact Information:
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Office: GR 3.318
Office Hours: MW 10:30am-11:30pm, and by appointment

Supplemental Instruction:
Supplemental Instruction (SI) is offered for this course. SI sessions are free group study opportunities, scheduled three times per week. Sessions are facilitated by an SI leader who has recently taken the course and received an excellent final grade. Attendance is voluntary. UTD data show that students who attend SI at least 10 times earn a half to a whole letter grade higher than students who do not. For information about the days, times and locations for SI sessions, refer to www.utdallas.edu/studentsuccess/leaders/si.html.

Course Pre-requisities:
MATH 1314 (College Algebra), or equivalent.

Course Description:
This 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.

Student Learning Objectives/Outcomes:
This course aims to provide for you a strong foundational understanding of how statistics is done in the social sciences which will allow you to not only be able to understand published statistical results, but also be able to compute your own research as well. By the end of the course, you should be able to:

1) Be able to describe and utilize data.
2) Understand and apply probability and relevant concepts.
3) Create hypotheses and appropriately examine them.
4) Understand and utilize regression techniques.
5) Gather a working understanding of basic statistical software.

Required Textbook:
Statistics: Informed Decisions Using Data, 4th Edition. Michael Sullivan, Pearson Publishing. ISBN: 9780321757272.

The textbook should be available at the bookstore on campus, and at alternative retailers off campus. You should also be able to find used or rental copies as well, either in store, or online. Note: Do not confuse this book with a very similar book called *Fundamentals of Statistics*.

A basic calculator that can take square roots and raise numbers to powers is required.

Software

The primary software for the course is STATA. You can complete class assignments using STATA in the GR 3.402 computer lab if you choose not to install it on your personal computer. If you can afford it, or if you plan on continuing your statistical and methodological education in EPPS, you may purchase your own copy. For information, and to order, visit http://www.stata.com/order/new/edu/gradplans/. Either "Small Stata‖ or ―Intercooled Stata‖ will meet the needs of this course.

Additional examples will be shown with R. It is free and can be downloaded here: https://cran.r-project.org/bin/windows/base/. There is an additional graphical interface that simplifies the work with R, it's called R-Studio, is also free and can be downloaded here: https://www.rstudio.com/products/rstudio/download/.

Grading Policy:

Your course grade will be determined by the following:

1) Twelve (12) quizzes, best 10 counted, for a total of 70%.
2) Four (4) Problem Sets, for a total of 20%.
3) One (1) comprehensive Exam, worth 10%.

*Students completing all 12 class quizzes, if they choose, can exempt themselves from the Last Quiz and instead apply the 2 uncounted quizzes toward their final course grade. This means that students who have taken all 12 quizzes and are satisfied with their overall performance may opt-out of the comprehensive Last Quiz. This option is open **only** to students who complete the 12 quizzes. Those students wishing to take this option MUST make arrangements to meet with me on or before 4 December.

Grades are based on the standard grading scale: A = 100-90, B = 89-80, C = 79-70, etc., with pluses / minuses at my discretion and based on class performance.

If you have any questions about your grade on an assignment, please wait until 24 hours after receiving your assignment before discussing the grade with the professor. There are no exceptions to this policy. If you wish to have an assignment re-graded, it must be returned to the professor within two days of the day it was returned (if I am not available that day, ask the staff of the School of Economic, Political and Policy Sciences to leave it in my box). Assignments to be re-graded must include a memo stating the reason why you believe the assignment should be

re-graded. Finally, re-graded assignments can be graded higher, lower, or the same as the initial grade.

Exam Schedule: Comprehensive Exam – Dec. 7

There will be absolutely **NO MAKE UP QUIZZES**, as the two lowest scores are not considered in the final grade calculation. Except in the case where there is a legitimate, documented reason for missing the exam (i.e. a medical emergency), **NO MAKE UP LAST QUIZ**.

Problem Sets: Problem sets are distributed one week prior to the due date. These are intended to be good practical exercises, and also helpful practice for the comprehensive exam. Take these assignments seriously. All problem sets will be submitted via e-Learning.

Extra Credit: There is no extra credit available in this course. Note the grading criteria and plan accordingly for your success.

Late Work: No late work will be accepted!

Assignments and Academic Calendar:

Date and Topic			Readings
Week 1:			
	24-Aug	Introduction to the Course	
	26-Aug	Introduction to Statistics Software	
Week 2:			
	31-Aug	Research Design and Sampling	Chapter 1.1-1.4
	2-Sep	Descriptive Statistics I	Chapter 3.1-3.2
Week 3:			
	7-Sep	Labor Day (NO CLASS)	
	9-Sep	Descriptive Statistics II	Chapter 3.3-3.4
Week 4:			
	14-Sep	Visualization of Data – **Quiz 1**	Chapter 2.1-2.2
	16-Sep	Probability I	Chapter 5.1-5.2
Week 5:			
	21-Sep	Probability II – **Quiz 2**	Chapter 5.3-5.4
	23-Sep	Probability Review	
Week 6:			
	28-Sep	Probability Distributions **– Quiz 3**	Chapter 7.1-7.3
	30-Sep	Hypothesis Testing/Significance	Chapter 10.1
Week 7:			
	5-Oct	Z-tests – **Quiz 4**	NOT IN BOOK

	7-Oct	Estimation/Confidence Intervals - **PS1 Due**	Chapter 9.1-9.4
Week 8:			
	12-Oct	Comparing within groups – **Quiz 5**	Chapter 10.2-10.3
	14-Oct	Comparing two groups	Chapter 11.2-11.3
Week 9:			
	19-Oct	Comparing two groups – **Quiz 6**	Chapter 11.1
	21-Oct	Analysis of Variance I – **Quiz 7**	Chapter 13.1
Week 10:			
	26-Oct	Analysis of Variance II – **PS2 Due**	In-class examples
	28-Oct	Scattergrams and Correlations – **Quiz 8**	Chapter 4.1
Week 11:			
	2-Nov	Linear Regression I	Chapter 4.2-4.3
	4-Nov	Linear Regression II – **Quiz 9**	Chapter 14.1-14.2
Week 12:			
	9-Nov	Linear Regression III	Chapter 14.3
	11-Nov	Categorical data I – **Quiz 10**	Chapter 12.1
Week 13:			
	16-Nov	Categorical data II – **PS3 Due**	Chapter 12.2
	18-Nov	Nonparametric testing I – **Quiz 11**	Chapter 15.3-15.4
Week 14:			
	23-Nov	Thanksgiving Break - NO CLASS	
	25-Nov	Thanksgiving Break - NO CLASS	
Week 15:			
	30-Nov	**Quiz 12**	
	2-Dec	Exam Review – **PS4 Due**	
Week 16:			
	7-Dec	**Exam**	

Course & Instructor Policies

Attendance is expected, but is generally not mandatory. However, missed quizzes and exams cannot be made up. It is in your best interest to attend lectures, as virtually the entirety of the quizzes will be based solely on materials delivered during lectures. You are all adults, and have paid to be here. I am not a babysitter, meaning I will not force you to come to class or do your assignments. Should you choose to not come to class or do your assignments, you also choose to accept any consequences of your decision.

Please silence your cell phones before coming to class. Do not talk or text on your phone during class—this kind of behavior is extremely disruptive to students around you and to me.

Furthermore, it is disrespectful. If I notice ringing cell phones or other disruptive behavior, I reserve the right to dock points from a student's final grade. Do not sleep in class—bring caffeine if you need it

Cell phones, laptop computers, and other electronic devices are not allowed on desks during quizzes or exams. If you are caught with either during a quiz, you will receive an automatic zero.

The best way to succeed is to be on time, participate in discussions, ask questions, study hard, and take advantage of the supplemental instruction opportunities.

Email is the best way to get a hold of me. Should you need to email me, you must do so from your UTD email address. I will not respond to emails from external email addresses. I am also not allowed to discuss grades over email. You may speak with me before or after class, during office hours, or by arranging an appointment.

You are expected to check e-Learning frequently. I will often post Announcements containing important information for this course. Course materials will also be posted to e-Learning, but they will be mostly useless to you if you do not come to class. If you do miss class, be sure to obtain notes. In class, there will be many examples and discussions that will not be covered in the slides. That is where the meat of helpful information will be contained.

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 Professor.