ECONOMICS 400: ECONOMIC STATISTICS AND ECONOMETRICS

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This is the required introductory course in economic statistics and econometrics for economics majors. It introduces students to the basic concepts of statistical description, probability theory, statistical inference and econometrics as they apply to economic analysis. In particular, the course will emphasize regression analysis, since economics students will be exposed to many regression-like analyses in their upper division economics courses. My goals for students in the course are twofold: (1) to achieve a rigorous understanding of the foundations of statistical theory, and (2) to gain real facility in performing statistical analysis on the computer. By the end of the course students will be both confident and capable using a sophisticated statistical software package to the point that they will be able to use it routinely in other courses and activities. *STOR 155 is a prerequisite for this course.*

The format of the course is lecture/discussion and laboratory. Most weeks the laboratory will take place when/where you wish. All you will need will be your computer and the Stata program on your computer. There will be a final exam (35% of the final grade), two midterm exams (23% each), a quiz on probability theory (4%), and laboratory/problem sets (15%). Snap quizzes may occur in lecture at any time and may be included as part of your homework grade. *There are no make-up exams for missed midterms.* Students with an *approved* excuse *for a maximum of one missed midterm exam* may have extra weight placed on the final exam, which must be taken at the regularly scheduled time and place. Due to the scheduling of the final exam this semester, "pink slip" (3 exams in 24 hours) excuses will not be entertained.

Materials for Purchase:

Required Texts and Software:

Required material for this course consists of one E- book and a statistical software program (Stata). The Economics 400 text comes bundled with online access to MyStatLab, an online homework program that we will use:.

Business Statistics: A Decision-Making Approach, Groebner, Shannon and Fry (10th ed) (an E-book that includes acess to the online *MyStatLab* used in this course). You can order this combination through the university at: *https://tinyurl.com/econ-400-001-unc-w19*. Should you desire a hard copy of the text, the publisher offers a looseleaf version at a reasonable price. Or, you can search the web for a used/earlier edition of the hardback.

Required Statistical Software: This course will provide intensive instruction in the use of the Stata statistical package. Stata is an extraordinarily powerful statistical tool that comes in various versions. Ordering instructions and descriptions of the options available are contained in a separate handout. **Purchase of Stata is required for all enrolled students. I will assume that you have Stata available on your computer.**

Recommended Manual:
Lab/Reference Manual: Lawrence C. Hamilton*, Statistics with Stata: Updated for Version 12.* Brooks/Cole Cengage Learning 2013. ISBN13: 978-0-8400-6463-9. (Also available as an e-book see http://www.cengagebrain.com/shop/search/9780840064639)

Your E-mail Address: Every student must have a functioning UNC e-mail address, and you *must* be reachable through that address. Your UNC e-mail address must be the address that accompanies the official UNC on-line class roll.

Mac vs. PC: All course material is guaranteed to work on Windows PCs. Mac users having trouble with course material should consult User Services in the basement of the Undergraduate Library. Over a number of semesters we've had few problems. In particular, the standard web browser on the Mac (Safari) apparently does not refresh web pages automatically. If you're having trouble accessing course web material, try *refreshing* the course web page.

A course outline and schedule follow. Both are *tentative* at this point. If we deviate from the schedule, I will keep you informed as to where you ought to be.

Tentative Course Outline

Tuesday			Thursday		
Activity/Date	Econ 400 Text	Hamilton**	Activity/Date	Econ 400 text	Hamilton**
			1/10: Describing Data	Ch 1 Ch 2	Ch. 1 Ch. 3: Graphs
1/15: Describing Data	Ch. 2 Ch. 3	Ch. 5: Summary Statistics	1/17: Describing Data	Ch 3	Ch. 2 Data Mgmt*
1/22: Discrete Prob. Distributions	Ch. 5	Ch. 2 Data Mgmt*	**1/24 Quiz on Probability Theory**	This quiz is designed to assess your retention of basic probability theory which will not be covered during lecture. The material on this quiz will cover topics in Ch.4 and Turchi's lecture (found on Sakai)	
1/29: Discrete Prob. Distributions	Ch. 5	Ch. 2 Data Mgmt*	1/31: Continuous Distributions	Ch. 6	Ch. 2 Data Mgmt*
2/5: Sampling Distributions	Ch. 7	Ch. 2 Data Mgmt*	2/7: Sampling Distributions	Ch 7	Ch. 2 Data Mgmt*
2/12: Sampling Distributions & Estimation	Ch. 7,8		2/14: Estimating Means & Proportions	Ch 8	
2/19: Estimation & Hypothesis Testing	Ch 8, 9		2/21: Testing Hypotheses	Ch. 9	
2/26: Testing Hypotheses	Ch. 9, 10		**2/28: Midterm 1**		
3/5: Testing Hypotheses	Ch. 10		3/7: Testing Hypotheses	Ch. 10, 11	
3/12: Spring Break			**3/14: Spring Break**		
3/19: Linear Regression	Ch. 14		3/21: Linear Regression	Ch. 14	Ch. 7
3/26: Linear Regression	Ch. 14	Ch. 7	3/28: Linear & Multiple Regression	Ch. 14, 15	Ch. 7,8
4/2: Multiple Regression	Ch. 15	Ch. 7,8	**4/4: Midterm 2**		
4/9: Multiple Regression	Ch. 15	Ch. 7,8	4/11: Multiple Regression	Ch. 15	Ch. 7,8
4/16: Multiple Regression	Ch. 15	Ch. 7,8	4/18: Logit/Probit Anal.	Supple-mentary Chapter	Ch. 9
4/23: Logit/Probit Anal.	Supple-mentary Chapter	Ch. 9	4/25: Logit/Probit Anal.	Supple-mentary Chapter	Ch. 9

* When working on Hamilton's Chapter 2, Data Management, you may find the following online tutorial helpful:
http://www.cpc.unc.edu/research/tools/data_analysis/statatutorial

Another very useful web site for Stata can be found at:

    http://www.ats.ucla.edu/stat/stata/default.htm

** Readings from Hamilton, while optional, are highly recommended. Other readings from Hamilton will be referenced in conjunction with the Stata exercises.

☠ **Final Exam: Friday, May 3d @ 8 a.m. Carroll 111 Lecture Hall**