

## ECONOMICS 400h: HONORS ECONOMIC STATISTICS

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Office Hours:  
Tuesday, 4:45-5:45 p.m.  
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This is the required introductory course in economic statistics for economics majors. It introduces students to the basic concepts of statistical description, probability theory, and statistical inference 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.

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, the Stata program on your computer and the lab manual. There will be a final exam (35% of the final grade), two midterm exams (25% each), laboratory/problem sets (15%), and a "qualifying exam" that tests the student's ability to use the software package. *There are no make-up exams for missed midterms.* Students with an approved excuse for a maximum of one missed exam may have extra weight placed on the final exam, which must be taken at the regularly scheduled time and place. The qualifying exam will be "pass-fail"; however, students must pass this examination before they can receive credit for the course. You *must complete the qualifying exam before you will be allowed to take the final exam.*

### Materials for Purchase:

#### Required Texts and Software:

Required material for this course consists of two books and statistical software program (Stata). The Groebner text comes bundled with online access to MyStatLab, an online homework program that we will use. One of the following two packages (Groebner text + Hamilton book + Stata program):

#### Package 1:

David F. Groebner, Patrick W. Shannon, Phillip C. Fry, and Kent D. Smith, "Business Statistics: A Decision-Making Approach. (9th Edition) Prentice-Hall 2014. ISBN:9780133098785 – (Printed textbook + MyStatlab with ebook) + Hamilton book + Stata program. (Also available as printed 3-hole notebook text + MyStatlab with ebook ISBN: 9780321869531 + Hamilton + Stata)

#### Package 2:

David F. Groebner, Patrick W. Shannon, Phillip C. Fry, and Kent D. Smith, "Business Statistics: A Decision-Making Approach. (9th Edition) Prentice-Hall 2014. ISBN:9780321921486 – (MyStatlab with ebook only). + Hamilton book + Stata program.

You could buy a used copy of the Groebner book (9th edition), but you must also buy *mystatlab* and the combination could be more expensive than the packages above.

**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>)

**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.**

**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:** The University provides and supports Windows PCs to faculty. 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. 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	GSFS text	Hamilton**	Activity/Date	GSFS text	Hamilton**
1/12: <i>Describing Data</i>	Ch 1 Ch 2	Ch. 1 Ch. 3: Graphs	1/14: <i>Describing Data</i>	Ch. 2 Ch. 3	Ch. 5: Summary Statistics
1/19: <i>Describing Data</i>	Ch 3	Ch. 2 Data Mgmt*	1/21: <i>Probability</i>	Ch. 4	Ch. 2 Data Mgmt*
1/26: <i>Probability</i>	Ch. 4	Ch. 2 Data Mgmt*	1/28: <i>Probability</i>	Ch. 4	Ch. 2 Data Mgmt*
2/2: <i>Discrete Prob. Distributions</i>	Ch. 5	Ch. 2 Data Mgmt*	2/4: <i>Discrete Prob. Distributions</i>	Ch. 5	Ch. 2 Data Mgmt*
2/9: <i>Continuous Distributions</i>	Ch. 6	Ch. 2 Data Mgmt*	2/11: <i>Sampling Distributions</i>	Ch. 7	Ch. 2 Data Mgmt*
2/16: <i>Sampling Distributions</i>	Ch 7	Ch. 2 Data Mgmt*	2/18: <i>Sampling Distributions</i>	Ch. 7	
2/23: <i>Estimating Means &amp; Proportions</i>	Ch 8		2/25: <i>Estimating Means &amp; Proportions</i>	Ch. 8	
3/1: <i>Testing Hypotheses</i>	Ch. 9		3/3: <b>Midterm 1</b>		
3/8: <i>Testing Hypotheses</i>	Ch. 9		3/10: <i>Testing Hypotheses</i>	Ch. 9	
3/15: <b>Spring Break</b>			3/17: <b>Spring Break</b>		
3/22: <i>Testing Hypotheses</i>	Ch. 9, 10		3/24: <i>Testing Hypotheses</i>	Ch. 10, 11	
3/29: <i>Linear Regression</i>	Ch. 14	Ch. 7	3/31: <i>Linear Regression</i>	Ch. 14	Ch. 7
4/5: <i>Linear Regression</i>	Ch. 14	Ch. 7	4/7: <i>Multiple Regression</i>	Ch. 15	Ch. 7,8
4/12: <i>Multiple Regression</i>	Ch. 15	Ch. 7,8	4/14: <b>Midterm 2</b>		
4/19: <i>Multiple Regression</i>	Ch. 15	Ch. 7,8	4/21: <i>Multiple Regression</i>	Ch. 15	Ch. 7,8
4/26: <i>Multiple Regression</i>	Ch. 15	Ch. 7,8			

\* 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](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>

\*\* Other readings from Hamilton will be assigned in conjunction with computer exercises.

☞ **Final Exam: Tuesday May 3d @ 8 a.m.**