BPHD 8120: ECONOMETRICS I
Syllabus for Fall 2012
9:30 a.m. – 10:45 a.m. MW
Friday 106

Instructor
Rob Roy McGregor
227C Friday Building
Phone 704-687-7639
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Office Hours
2:30 p.m. – 4:00 p.m. MW
If the hours established are not convenient, feel free to make an appointment with me for another time or to stop by at another time when I am in the office.

Course Description
BPHD 8120. Econometrics I. (3) Prerequisites: Admission to the Ph.D. in Business Administration or Permission of Instructor. Advanced study of the theory and application of statistics to economic problems. Topics include the derivation of least squares estimators, maximum likelihood estimation, and problems of multicollinearity, heteroscedasticity, and autocorrelation. (Fall)

Course Objectives
The objective of this course is for students to master basic econometric concepts and apply these concepts to research questions in Economics and Finance. The course will rely on a combination of lecture, discussion, and problem sets. Because the course will focus on problem solving, particular attention will be given to the problem sets.

Means of Student Evaluation
Course grades will be determined by student performance on three in-class tests and several problem sets. These components will have the following weights in the calculation of students’ final grades:

<table>
<thead>
<tr>
<th>Test #1</th>
<th>20%</th>
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<tbody>
<tr>
<td>Test #2</td>
<td>20%</td>
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<tr>
<td>Test #3</td>
<td>20%</td>
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<tr>
<td>Problem Sets</td>
<td>40%</td>
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Letter grades for the course will be based on the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90% and above</td>
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<tr>
<td>B</td>
<td>80%-89.99%</td>
</tr>
<tr>
<td>C</td>
<td>70%-79.99%</td>
</tr>
<tr>
<td>U</td>
<td>below 70%</td>
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Test Dates
The first test will be on September 26; the second, on November 7; and the third, in the final exam slot for the course (8:00 a.m. – 10:30 a.m. on December 12).
**Academic Integrity**
All students are required to abide by the UNC Charlotte Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online at [http://legal.uncc.edu/policies/up-407](http://legal.uncc.edu/policies/up-407).

**Disability Accommodations**
Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services and follow the instructions of that office for obtaining accommodations.

**Other**
The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class and by email.

The last day to withdraw from a class with a grade of W (and retain other classes) is October 29, and the last day to withdraw from all classes with grades of W is November 19.

There will be no class meeting on the following days: September 3 (Labor Day), October 8 (Fall Break), and November 21 (Thanksgiving Break).

I will always try to be on time for each class during the semester. If I must be absent because of illness, emergencies, or University business, I will make every effort to notify you as far in advance as possible. On any given class day, though, if I am more than 15 minutes late for class and you have received no notification from me to the contrary, you may assume that class is canceled.

Between class meetings, any communication that I need to have with the class will be done by email, so students should check their University-assigned email accounts on a regular basis.

The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

**Textbooks and Other Resources**
There are three textbooks that are required for this course:


There are a number of other good introductory or specialized econometrics textbooks that you may find useful from time to time:


On the course outline, I indicate the appropriate readings for each topic. On occasion, I may assign additional readings that are not currently listed on the outline.

**Software**

I will support STATA for the econometric analyses that you will be doing in this course, but you are welcome to use other software. STATA is available in the public student computer labs (Friday 216 and Friday 338). You may purchase STATA at a reduced rate through the STATA website (http://stata.com/order/new/edu/gradplans/gp-direct.html). The STATA/IC version is sufficient for problem sets you will be assigned in this course and in BPHD 8130 (Econometrics II). If you expect to be working with large datasets in your research, then you may want to consider the STATA/SE version.

A website maintained at UCLA (http://www.ats.ucla.edu/stat/Stata/) has a number of resources that are quite useful for working with STATA. A useful STATA tutorial and the STATA programs and data used in Stock and Watson (2011) are available at http://wps.aw.com/aw_stock_ie_3/.

**Outline of Topics and Reading Assignments**

This course assumes a working knowledge of calculus, matrix algebra, and statistics, so we will not do in-class reviews of these topics. Appendices A (matrix algebra), B (probability and distribution theory), and C (estimation and inference) of Greene (2012) cover the material that we will need. An additional review of probability and statistics is in Chapters 2 and 3 of Stock and Watson (2011).

I. The Two-Variable Regression Model  
Greene (2012), Chapter 1  
Stock and Watson (2011), Chapters 1 and 4  
Kennedy (2008), Chapters 1 and 2
II. The Multiple Regression Model
Greene (2012), Chapters 2 and 3
Greene (2012), Chapter 4, pp. 51-56 and pp. 58-103
Greene (2012), Chapter 5, pp. 108-133
Stock and Watson (2011), Chapter 6
Kennedy (2008), Chapters 3, 4, and 12

III. Specification Analysis and Model Selection
Greene (2012), Chapter 4, pp. 56-58
Greene (2012), Chapter 5, pp. 134-143

IV. Functional Form and Structural Change
Greene (2012), Chapter 6
Stock and Watson (2011), Chapter 8
Kennedy (2008), Chapter 7

V. Heteroscedasticity
Greene (2012), Chapter 9
Stock and Watson (2011), Chapters 5 and 7
Kennedy (2008), Chapter 8, pp. 112-117

VI. Autocorrelation
Greene (2012), Chapter 20
Stock and Watson (2011), Chapter 16, pp. 659-663
Kennedy (2008), Chapter 8, pp. 118-123

VII. Introduction to Time Series Modeling and Forecasting
Greene (2012), Chapter 21, pp. 942-959
Stock and Watson (2011), Chapter 14
Kennedy (2008), Chapter 20

*** Time Permitting ***