

# **ECON 4112: ECONOMETRICS II**

## **Syllabus for Spring 2019**

**9:05 a.m. – 9:55 a.m. MWF**

**Friday 155**

### **Instructor**

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### **Office Hours**

By appointment.

### **Textbooks**

There are two textbooks that are especially useful for this course:

- (1) Stock, James H., and Mark W. Watson. 2015. *Introduction to Econometrics*, updated 3<sup>rd</sup> edition. Boston, MA: Pearson Addison Wesley.
- (2) Wooldridge, Jeffrey M. 2016. *Introductory Econometrics: A Modern Approach*, 6<sup>th</sup> edition. Boston, MA: Cengage Learning.

On the Outline of Topics and Reading Assignments (page 4 of this syllabus), I have listed the relevant readings from Stock and Watson (2015) and Wooldridge (2016). If you already have one of these textbooks, then you will be fine; if you do not already have one of these textbooks, then you should buy one of them as soon as possible.

### **Course Objectives**

We will investigate advanced data analysis techniques that economists often use. We will focus on understanding the strengths and limitations of the methods we cover, on using econometric software to apply these methods, and on interpreting the results we get.

### **Software**

We will use STATA for the applications we do in this course. STATA is available on all Belk College computers and can be accessed via Citrix (instructions for this access will be provided separately). You can purchase STATA at a reduced rate through the STATA website (<http://www.stata.com/order/new/edu/gradplans/student-pricing/>). The STATA/IC version is sufficient for the problem sets that you will be assigned in this course. The websites <http://data.princeton.edu/stata/>, <http://www.ats.ucla.edu/stat/stata/>, and <https://www.ssc.wisc.edu/sscc/pubs/sfr-intro.htm> have a number of examples and other resources that you may find helpful as you work with STATA.

### **Means of Student Evaluation**

Course grades will be determined by your performance on 6 problem sets (4% each), 10 short quizzes (1% each), 3 hour tests (12% each), and a comprehensive final exam (30%). Letter grades for the course will be based on the following scale: A, 90%-100%; B, 80%-89.99%; C, 70%-79.99%; D, 60%-69.99%; F, below 60%. Your course grade will be based only on your performance on the 6 problem sets, the 10 short quizzes, the 3 hour tests, and the comprehensive final exam. Individual extra credit assignments will **NOT** be made.

## **Problem Sets**

Problem sets must be typed and must be submitted in class on the assigned due dates. A problem set may be submitted after the due date, but there will be a penalty of one letter grade for each day that the submission is late. Once a problem set has been graded and returned to the class, no late submission will be accepted, and you will receive a grade of zero on that problem set. The first problem set will be due on January 25; the second, on February 15; the third, on February 22; the fourth, on March 29; the fifth, on April 12; and the sixth, on April 26.

## **Short Quizzes and Tests**

There will be a short quiz or an hour test each Friday during the semester (except January 11 and April 19). The short quizzes will be on January 18, January 25, February 8, February 15, February 22, March 15, March 22, March 29, April 12, and April 26. The first test will be given on February 1; the second, on March 1; and the third, on April 5. The comprehensive final exam will be given at 8:00 a.m. on May 3 (the exam slot assigned for this course).

## **Academic Integrity**

All students are required to read and abide by the 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>. Please be aware that faculty may ask students to produce identification at examinations and that faculty may require students to demonstrate that assignments completed outside of class are their own work.

## **Disability Accommodations**

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from the Office of Disability Services early in the semester. For more information about accommodations, you may contact the Office of Disability Services at 704-687-0040 or visit the Office of Disability Services itself in Fretwell 230.

## **Revision of Syllabus during Semester**

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.

## **Attendance**

Students are expected to attend every class and remain in class for the duration of the session. Failure to attend class or arriving late may affect your ability to achieve course objectives, which could affect your course grade. An absence—whether excused or unexcused—does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work done during class meetings. If you do have to miss a class, you should NOT ask me to go over with you the lecture material that you missed. It is your responsibility to get this information from one of your classmates.

## **Instructor Absence or Tardiness**

If I am late in arriving to class, you must wait a full 20 minutes after the start of class before you may leave without being counted absent, or you must follow any written instructions that I give you about my expected tardiness.

## **Computer Use in the Classroom**

Students are permitted to use computers during class only for taking notes and for doing other class-related work. Those using computers during class for work that is not related to this class must leave the classroom for the remainder of the class period.

### **Recording in the Classroom**

Electronic video and/or audio recording is not permitted during class unless the student obtains permission from the instructor. If permission is granted, any distribution of the recording is prohibited. Students with specific electronic recording accommodations authorized by the Office of Disability Services do not require instructor permission, but the instructor must be notified of any such accommodation prior to recording. Any distribution of such recordings is prohibited.

### **Course Withdrawals**

The last day to withdraw from courses with grades of W is March 19. Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are worried about your ability to succeed in this course, then you should talk with me as soon as possible. University policy allows students only a limited number of opportunities to withdraw from courses. It is important for you to understand the financial and academic consequences of course withdrawals. For more information, see the UNC Charlotte policy on withdrawals at <https://provost.uncc.edu/policies/withdrawal>.

### **Belk College of Business Diversity Statement**

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.

## Outline of Topics and Reading Assignments

I assume that you have a basic knowledge of calculus and probability and statistics, so we will not be reviewing these topics in class. The material that you will need is covered in Chapters 2 & 3 of Stock and Watson (2015) and in Appendices A, B, & C of Wooldridge (2016).

- I. Simple and Multiple Regression Analysis: Estimation  
Stock and Watson (2015), Chapters 4 & 6  
Wooldridge (2016), Chapters 2 & 3
- II. Simple and Multiple Regression Analysis: Inference  
Stock and Watson (2015), Chapters 5 & 7  
Wooldridge (2016), Chapters 4 & 5
- III. Nonlinear Regression Functions  
Stock and Watson (2015), Chapter 8  
Wooldridge (2016), Chapter 6  
Wooldridge (2016), Chapter 7, pp. 205-224
- IV. Introduction to Time Series Regression and Forecasting  
Stock and Watson (2015), Chapter 14  
Wooldridge (2016), Chapter 10, pp. 312-314 & pp. 317-338  
Wooldridge (2016), Chapter 11  
Wooldridge (2016), Chapter 18, pp. 574-580 & pp. 586-592
- V. Estimation of Dynamic Causal Effects  
Stock and Watson (2015), Chapter 15  
Wooldridge (2016), Chapter 10, pp. 314-316  
Wooldridge (2016), Chapter 12, pp. 372-391
- VI. Additional Topics in Time Series Regression  
Stock and Watson (2015), Chapter 16  
Wooldridge (2016), Chapter 12, pp. 391-396  
Wooldridge (2016), Chapter 18, pp. 580-586 & pp. 592-598
- VII. Qualitative Dependent Variable Models  
Stock and Watson (2015), Chapter 11  
Wooldridge (2016), Chapter 7, pp. 224-233  
Wooldridge (2016), Chapter 17, pp. 524-536
- VIII. Regression Analysis with Panel Data  
Stock and Watson (2015), Chapter 10  
Wooldridge (2016), Chapters 13 & 14

If time permits, we will also cover instrumental variables regression (Chapter 12 of Stock and Watson 2015, Chapter 15 of Wooldridge 2016).