

**ECON 4870, MULTIVARIATE REGRESSION ANALYSIS  
UNIVERSITY OF NORTH TEXAS, FALL 2010**

Instructor: Dr. Margie Tieslau  
Office: 220 E, Hickory Hall  
Phone: 940.565.3442  
E-mail: tieslau@unt.edu  
Office Hours: Mondays & Wednesdays: 13.00 – 16.00 (1 PM – 4 PM)  
in Hickory Hall 220 E  
Mondays: 17.30 – 18.30 (5:30 PM – 6:30 PM)  
in Gateway 141  
Tuesdays: 17.30 – 18.30 (5:30 PM – 6:30 PM)  
in Hickory Hall 220 E

**COURSE DESCRIPTION/OBJECTIVES:**

This course introduces the basic statistical methods used by econometricians to analyze real-world data and to test various theories. The course will provide a sound theoretical foundation of introductory-level econometrics while using real-world applied examples to illustrate theoretical concepts. In particular, students will learn how to pose a relevant research question, analyze a regression model that addresses this question, and explain the findings of the analysis. Particular attention will be given to data and regression models commonly found in the fields of accounting, economics, finance, political science and sociology.

**PREREQUISITES:**

In order to enroll in this class you must have earned grades of "B" or better in ECON 4630 (Research Methods), or MATH 4650 (Statistics), or DSCI 3710 (Business Statistical Analysis). Some of the topics with which you already should be familiar are: algebra; joint probability; conditional probability; frequency distributions; probability density functions; cumulative distribution functions; the normal and standard normal distributions; the t-distribution; the F-distribution; the Chi-square distribution; one-tailed and two-tailed hypothesis tests; confidence intervals; p-values; and slopes.

**TEXT:**

The text for this course is *Introductory Econometrics*, 4<sup>th</sup> edition (2009), by Jeffrey M. Wooldridge (South-Western, publishers). In addition, it is perfectly acceptable to use the third edition of this textbook (2006); two copies of the third edition of this text are on reserve at the main library.

**GRADES:**

Grades for the course will be based on the total points accumulated on a midterm exam, a number of quizzes, and a final exam. The midterm exam is scheduled for October 19<sup>th</sup> and you will have the first 2½ hours of the class to complete it (no lecture will follow the midterm exam). There will be NO make-ups for a missed midterm exam; if you miss the exam with a valid University-approved excuse, the weight will be redistributed to your final exam. The final exam is scheduled for December 14<sup>th</sup> and you will have the first 2½ hours of the class to complete it. Except for those with official University-approved excuses, everyone will be required to take the final exam at the scheduled time.

**CALCULATORS:**

You will NOT be permitted to bring a calculator to the exams. A basic calculator will be provided for you on exam days and this is the only calculator that you will be permitted to use on the exams.

**E-MAIL:**

I typically receive a large volume of e-mails each day and so it is not possible for me to read all of my e-mails every day. Therefore, if you send me an e-mail, please keep in mind that I may not get to read it until several days after you send it. If you want to maximize the probability that I will read and respond to your e-mail in a timely manner, you should do the following: (1.) use the phrase "ECON 5640" in the subject heading; (2.) make sure your FULL NAME appears in the "from" line; (3.) sign your e-mail using your full name.

**ATTENDANCE POLICY:**

Please note that even though I will NOT take attendance, *class attendance is not optional*. If you miss a class it is your responsibility to find out what was covered on that day and obtain a copy of the missed notes from a classmate.

**A PREVIEW OF WHAT THIS CLASS IS ABOUT:**

This class will teach you the mathematical and statistical techniques needed to analyze and quantify relationships that exist between variables in the real world; for example:

**TENTATIVE COURSE OUTLINE:**

<b>DATE:</b>	<b>SUBJECT:</b>	<b>READINGS*:</b>
August 31	Review syllabus & course introduction; Begin Topic 1: Matrix Algebra & Statistical Review	Sections 1.1 – 1.3; Appendices A.1, A.2, B, C.1 – C.3, C.5, C.7, D.1 & D.2
September 7	Finish Topic 1: Matrix Algebra & Statistical Review	Sections 1.1 – 1.3; Appendices A.1, A.2, B, C.1 – C.3, C.5, C.7, D.1 & D.2
September 14	Topic 2: Simple Linear Regression	Sections 2.1 – 2.3, 2.5 and Appendix 2A
September 21	Topic 3: Multiple Regression	Sections 1.4, 3.1 – 3.3 & 3.5, and Appendix A.5
September 28	Topic 4, Part 1: Single Restriction Hypothesis Testing	Chapter 4 and Appendices B.5 & C.6
October 5	Topic 4, Part 2: Multiple Restriction Hypothesis Testing	Chapter 4 and Appendices B.5 & C.6
October 12	Finish any left-over material and review for midterm exam	
<b>OCTOBER 19</b>	<b>MIDTERM EXAM: Topics 1 through 4</b>	<b>All material listed above.</b>
October 26	go over exam; Topic 5: Non-Linear Regression Topic 6: Multicollinearity and Micronumerosity	Section 2.4, Chapter 6, and Appendices A.3, A.4 & C.4 Section 3.4 and Appendix D.3
November 2	Topic 7: Heteroskedasticity Topic 8: Autocorrelation	Sections 8.1 – 8.4, 10.1 – 10.3, and 12.1 – 12.3
November 9	Topic 9, Part 1: Intercept Dummy Variables	Chapter 7
November 16	Topic 9, Part 2: Slope Dummy Variables	Chapter 7
November 23	Reading day.	
November 30	Applications.	
December 7	Finish any left-over material and review for final exam.	
<b>DECEMBER 14</b>	<b>FINAL EXAM: Topics 1 through 9</b>	<b>All material listed above.</b>

\*All readings refer to both the 3<sup>rd</sup> edition and the 4<sup>th</sup> edition of Wooldridge's textbook.

## **Cheating and Plagiarism**

The UNT Department of Economics adheres to the University's Policy on Cheating and Plagiarism. To view the complete policy go to [www.vpaa.unt.edu](http://www.vpaa.unt.edu)

Cheating: The use of unauthorized assistance in an academic exercise, including but not limited to:

1. use of any unauthorized assistance to take exams, tests, quizzes or other assessments;
2. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments;
3. acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University;
4. dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor;
5. any other act designed to give a student an unfair advantage on an academic assignment.

Plagiarism: Use of another's thoughts or words without proper attribution in any academic exercise, regardless of the student's intent, including but not limited to:

1. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation.
2. the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.

## **Disability Accommodation**

If you have a disability for which you will require accommodation under the terms of the Americans with Disabilities Act or Section 504 of the Rehabilitation Act of 1973, please discuss your needs with me after class or at office hours.

The Economics Department cooperates with the Office of Disability Accommodation (ODA) to make reasonable accommodations for qualified students with disabilities. If you have not registered with ODA, we encourage you to do so. Please present your written accommodation request on or before the 4th class day.