ECON 4870, MULTIVARIATE REGRESSION ANALYSIS  
UNIVERSITY OF NORTH TEXAS, FALL 2013

Instructor: Dr. Margie Tieslau  
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Office Hours: Mondays & Tuesdays: 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:
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, set up and estimate a regression model that addresses this question, and explain their findings. 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), MATH 3680 (Applied Statistics), 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, 4th 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, about eight quizzes, and a final exam. The midterm exam is scheduled for October 22nd 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 the Tuesday night of finals week, December 10th 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.
CALCULATOR POLICY:
You will NOT be permitted to bring a calculator to the exams or quizzes. A basic calculator will be provided for you on exam days and this is the only calculator that you will be permitted to use.

E-MAIL POLICY:
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.

CLASSROOM POLICY:
During class time (including exams) students are forbidden to have or use electronic devices such as laptop computers, tablets, iPads and the like, BlackBerries, cell phones, Bluetooth devices, or anything that uses headphones, earphones, ear buds or the like (except in special cases where students have verified disabilities that require such devices).

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 learn the material that was covered on that day. I will NOT provide a copy of the missed notes.

INTERNET RESOURCES:
If you miss class and you choose to use the internet as a source to learn the missed material, you are strongly cautioned against doing so. There is a wealth of information on the internet that is NOT correct, even though it appears to be.

ACCEPTABLE STUDENT BEHAVIOR:
Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at www.unt.edu/csrr.

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. Some examples will be discussed now.
## TENTATIVE COURSE OUTLINE:

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUBJECT</th>
<th>READINGS*</th>
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<tbody>
<tr>
<td>September 3</td>
<td>Review syllabus &amp; course introduction; Begin Topic 1: Matrix Algebra &amp; Statistical Review</td>
<td>Sections 1.1 – 1.3; Appendices A.1, A.2, B, C.1 – C.3, C.5, C.7, D.1 &amp; D.2</td>
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<td>September 10</td>
<td>Finish Topic 1: Matrix Algebra &amp; Statistical Review</td>
<td>Sections 1.1 – 1.3; Appendices A.1, A.2, B, C.1 – C.3, C.5, C.7, D.1 &amp; D.2</td>
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<td>September 17</td>
<td>Topic 2: Simple Linear Regression</td>
<td>Sections 2.1 – 2.3, 2.5 and Appendix 2A</td>
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<td>September 24</td>
<td>Topic 3: Multiple Regression</td>
<td>Sections 1.4, 3.1 – 3.3 &amp; 3.5, and Appendix A.5</td>
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<td>October 1</td>
<td>Topic 4, Part 1: Single Restriction Hypothesis Testing</td>
<td>Chapter 4 and Appendices B.5 &amp; C.6</td>
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<tr>
<td>October 8</td>
<td>Topic 4, Part 2: Multiple Restriction Hypothesis Testing</td>
<td>Chapter 4 and Appendices B.5 &amp; C.6</td>
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<td>October 15</td>
<td>Finish any left-over material and review for midterm exam</td>
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<td>OCTOBER 22</td>
<td>MIDTERM EXAM: Topics 1 through 4</td>
<td>All material listed above.</td>
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<td>October 29</td>
<td>go over exam; Topic 5: Non-Linear Regression; Topic 6: Multicollinearity and Micronumerosity</td>
<td>Section 2.4, Chapter 6, and Appendices A.3, A.4 &amp; C.4 Section 3.4 and Appendix D.3</td>
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<td>November 5</td>
<td>Topic 7: Heteroskedasticity; Topic 8: Autocorrelation</td>
<td>Sections 8.1 – 8.4, 10.1 – 10.3, and 12.1 – 12.3</td>
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<td>November 12</td>
<td>Topic 9, Part 1: Intercept Dummy Variables</td>
<td>Chapter 7</td>
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<td>November 19</td>
<td>Topic 9, Part 2: Slope Dummy Variables</td>
<td>Chapter 7</td>
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<td>November 26</td>
<td>Reading day</td>
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<td>December 3</td>
<td>Applications; finish any left-over material; review for final exam.</td>
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<td>DECEMBER 10</td>
<td>FINAL EXAM: Topics 1 through 9</td>
<td>All material listed above.</td>
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*All readings refer to the 4th edition of Wooldridge's textbook.*
Cheating and Plagiarism

Cheating of any kind is absolutely forbidden in this class. If you engage in any form of cheating, no matter how innocent it may seem to you, I will prosecute you to the fullest extent of the law.

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

**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.
GENERAL INFORMATION

1. Come to class EVERY DAY and come on time.

2. If you have to come late, do so quietly.

3. Plan to be here the full 3 hours (including today).

4. We will take a break half way through the class; if you need to step out at some other time, feel free to do so, just do so quietly (try GUM if you are falling asleep.)

5. Bring the course packet to class every day.

6. Do the "practice" exercises in the course packet after EVERY class.

7. Ask questions at any time.

8. DURING CLASS, YOU ARE NOT PERMITTED TO USE:
   
   LAPTOPS, TABLETS
   CELL PHONES, SMART PHONES
   MP3 PLAYERS
   OTHER ELECTRONIC DEVICES
   OR ANYTHING THAT MAKES USE OF EARPHONES OR EAR BUDS