ECON 4875, EMPIRICAL LINEAR MODELING  
UNIVERSITY OF NORTH TEXAS  
SPRING 2023

Classroom and time:  Gateway 141; Wednesdays, 6:30 PM to 9:20 PM  
Instructor:  Dr. Margie Tieslau  
Office:  Wooten Hall 343  
e-mail:  Margie.Tieslau@unt.edu  
Office Hours:  Wednesdays, 12 PM (noon) to 3:15 PM in Wooten Hall 343  
Thursdays, 2 PM to 5 PM Wooten Hall 343  
Office hours also available by Zoom, at your request.

COURSE DESCRIPTION:
This course provides the tools necessary to analyze, interpret, and develop empirical applications of econometric estimation procedures. We will explore an assortment of applied analytical problems that typically are encountered in real-world settings, with particular attention given to examples commonly found in the fields of accounting, business, economics, finance and political science. At the completion of the course, you will have developed proficiency in the following areas: (1.) organizing, cleaning and preparing data; (2.) estimating linear and intrinsically-linear regression models; (3.) interpreting econometric results and computer output; (4.) engaging in applied research and data analysis; and, (5.) working with SAS.

REQUIREMENTS & COURSE PRE-REQUISITES:
The pre-requisites for this course are grades of "B" or better in both ECON 4870, Introduction to Econometrics, and MATH 1710, Calculus I. In addition, students are expected to know how to construct presentations in PowerPoint (Prezi is not permitted) and generate graphs in Excel (in particular, line graphs, bar graphs, and pie charts). In addition, for your final exam, you will present your work on BC projects 1 through 5, and these presentations will be made virtually via Zoom. Therefore, you MUST have access to a computer (presentations CANNOT be made via cell phone) and a quiet and private space in which to make your presentation.

TEXT/READING MATERIAL:
This course will draw on material from the primary text from ECON 4870, Introductory Econometrics, 6th or 7th edition, by Jeffery Wooldridge (South-Western Cengage Learning, publishers. In addition, your notes from ECON 5640 should be a useful resource for reading material.

COURSE STRUCTURE:
Part of each class will be allocated to lecture, and part to computer lab work. You are required to work on material from the lecture during the lab period of class. In addition, you are expected to spend a considerable amount of time outside of class working in a computer lab.
GRADING SCHEME:

Grades for the course will be based on the total number of points accumulated, as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points:</th>
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<tbody>
<tr>
<td>Project #1</td>
<td>25 points</td>
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<tr>
<td>Project #2</td>
<td>20 points</td>
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<tr>
<td>Project #3</td>
<td>30 points</td>
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<td>Project #4</td>
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<td>Project #5</td>
<td>20 points</td>
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<tr>
<td>BC Project #1</td>
<td>40 points</td>
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<tr>
<td>BC Project #2</td>
<td>30 points</td>
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<tr>
<td>BC Project #3</td>
<td>45 points</td>
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<tr>
<td>BC Project #4</td>
<td>25 points</td>
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<tr>
<td>BC Project #5</td>
<td>30 points</td>
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<tr>
<td>Final exam (BC presentation)</td>
<td>20 points</td>
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</table>

Total points possible = 300

Individual assignments and the final exam will not be “curved.” A curve will be applied to the final point total, as necessary. Based on the curved point total, grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Points Accumulated</th>
<th>Grade</th>
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<tbody>
<tr>
<td>243 +</td>
<td>A</td>
</tr>
<tr>
<td>216 – 242</td>
<td>B</td>
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<tr>
<td>189 – 215</td>
<td>C</td>
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<tr>
<td>162 – 188</td>
<td>D</td>
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</table>

Projects:

Projects 1 through 5 are exercises that will reinforce the applied analytical material covered in class. Each project must be submitted to Dr. T. via email (at Margie.Tieslau@unt.edu), as noted in the directions to each assignment. You must submit your projects as PowerPoint presentations. More detailed information about each project will be provided as the semester progresses.

Buxton Challenge (BC) Projects:

"Buxton Co." is a Fort Worth-based consulting company that builds econometric models to help major companies make smarter business decisions in the areas of market planning, marketing, and merchandising, in order to help firms grow their businesses. For the "Buxton Challenge" project, you will be analyzing data from one of Buxton's recent clients, working on one of Buxton's actual consulting projects. The five Buxton Challenge projects will be very similar to the 5 previous projects on which you worked. This project will be introduced on the evening of March 22nd, and more detailed information about each specific project will be provided each subsequent week.

Final Exam (Buxton Challenge Presentation):

For the final exam, you will present the work that you did for BC projects 1 through 5. These presentations will take place virtually via Zoom on the Wednesday evening of finals week, May 10th, from 6:30 PM to 9:30 PM. Members of Buxton’s analytics team will observe your final presentation.
# ECON 4875 COURSE SCHEDULE for SPRING 2023

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC OF DISCUSSION</th>
<th>READINGS*:</th>
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</thead>
<tbody>
<tr>
<td>Jan. 18</td>
<td>Topic #1, Part 1: Pre-Model Analysis on the Dependent Variable and Introduction to SAS</td>
<td>chapter 1</td>
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<tr>
<td>Jan. 25</td>
<td>Topic #1, Part 2: Pre-Model Analysis on Continuous Independent Variables</td>
<td>chapter 1, sections 2.4, 6.1 and 9.5</td>
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<td>Feb. 1</td>
<td>Project #1 due by email, by 3 PM</td>
<td>chapter 7</td>
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<td>Topic #2: Two-Characteristic Dummy Variables</td>
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<td>Feb. 8</td>
<td>Topic #3: Multiple Characteristic Dummy Variables &amp; Limited Integer Value Variables</td>
<td>chapter 7</td>
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<tr>
<td>Feb. 15</td>
<td>Project #2 due by email, by 3 PM</td>
<td>&quot;Cassandra&quot; and ASA articles, and chapters 2–6</td>
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<td>Topic #4: Model Selection &amp; Inference in Regression</td>
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<tr>
<td>Feb. 22</td>
<td>Project #3 due, by email, by 3 PM</td>
<td>&quot;Cassandra&quot; and ASA articles, and chapters 2–6</td>
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<td>Topic #5: Model Scoring &amp; Sequential Regression</td>
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<td>March 1</td>
<td>Project #4 due by email, by 3 PM</td>
<td>chapter 6 and section 9.1 section 7.5</td>
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<td>Topic #6: Intrinsically Linear Non-Linear Models</td>
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<td>Topic #7: The Linear Probability Model</td>
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<td>March 22</td>
<td>Project #5 due, by email, by 3 PM; open lab</td>
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<td>March 15</td>
<td>SPRING BREAK</td>
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<td>March 29</td>
<td>BC Project #1 due by email, by 3 PM</td>
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<td>BC Project #2 due by email, by 3 PM</td>
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<td>Topic #10: Non-Random Sampling</td>
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<td>April 5</td>
<td>BC Project #2 due by email, by 3 PM</td>
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<td>BC Project #3 due, by email, by 3 PM; open lab</td>
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<tr>
<td>April 12</td>
<td>open lab; work on BC Project #3</td>
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<td>April 19</td>
<td>BC Project #3 due by email, by 3 PM</td>
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<td>BC Project #4 due by email, by 3 PM; open lab</td>
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<tr>
<td>April 26</td>
<td>BC Project #4 due, by email, by 3 PM; open lab</td>
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<tr>
<td>March 3</td>
<td>BC Project #5 due, by email, by 3 PM; open lab</td>
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<tr>
<td>March 10</td>
<td>Final Exam: Buxton Challenge Presentations via Zoom, 6:30 PM – 9:30 PM</td>
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*Readings refer to both the 6th and 7th editions of the Wooldridge text.*
CLASS HANDOUTS:
All class handouts will be made available on Canvas approximately three days before class meets. YOU are responsible for bringing a copy of the handout with you each night. The handout that you should bring to class will be called something such as: "Lecture outline for topic X.pdf," or "Lecture outline for topic X part 1.pdf," or "Lecture outline for topic X part 2.pdf," where X refers to the topic number. You might be able to print the handout once you are in the classroom, but there is no guarantee that the printers will be working. In addition, it is imperative that you DO NOT PRINT ONCE CLASS BEGINS!

ATTENDANCE POLICY:
Although you will not be graded on attendance, class attendance is not optional. If you miss class it is YOUR responsibility to find out what was covered on that night and make up the missed material before the next class meeting.

INTERNET RESOURCES:
Be forewarned: If you use the internet as a source to learn material for this class, you are strongly cautioned to do so at your own risk! There is a wealth of information on the internet that is NOT correct, even though it appears to be. If you collect information from sources other than refereed journal articles, that information might be incorrect and it might cost you points on graded assignments.

CLASSROOM POLICIES:
Masks/face coverings are optional. Please respect the decisions of your classmates regarding whether or not they wear a mask.

During class, students are forbidden to have or use electronic devices such as tablets, cell phones, headphones, earphones, ear buds or the like (except in special cases where students have a verified need that requires such devices).

COMMUNICATION EXPECTATION:
If Dr. T. needs to contact you to convey class-related information, in keeping with University policy, she will post announcements in Canvas and use your OFFICIAL UNT email address ONLY. Thus, it is YOUR responsibility to check your UNT email and the Canvas announcements for this class on a regular basis.

If you send an email to Dr. T., please only use your official UNT email account. In addition, Dr. T. typically receives a large volume of emails each day so it might not be possible to respond to all emails right away. To maximize the probability that she will read and respond to your email in a timely manner, please: (1.) use the words "ECON 4875" in the subject heading; (2.) include your full name in the "from" line; (3.) sign your email using your full name.

If you email Dr. T. questions about your SAS work, please cut and paste the contents of your log window into a Word file and send that with your questions.
SOFTWARE:
The software package used in this course is PC SAS, version 9.4 (or higher). If you want to get the maximum benefit from this class, you should put a tremendous amount of effort into learning this software package! You can use the lab run by the College of Arts & Sciences in room 330 of the GAB. This lab should be open on the following days and times: Mondays through Thursdays, 8 AM to 10 PM, Fridays from 8 AM to 5 PM, and Saturdays & Sundays from 12 PM (noon) to 8 PM. The lab is closed during spring break.

Directions on how to use the lab remotely can be found at: https://itservices.cas.unt.edu/covid-19/labs.

You also can access SAS through “desktop streaming” (for students of the College of Liberal Arts & Sciences) or “virtual lab” (for students in the College of Business). You should be able to do this either through a web browser or through the VMware Horizon Client. It might be easier and less cumbersome to use the VMware method since, by this method, you have a separate program for accessing the software, rather than working within a web browser. To do that, go to: https://view.euc.untsystem.edu/portal/webclient/index.html#!/. Detailed instructions on how to access “desktop streaming” and “virtual lab” are available at: https://itservices.cas.unt.edu/services/computers/articles/access-desktop-streaming.

Note that “virtual lab” offers a much better experience so if you have that access, you should use it.

Note that when working with SAS via desktop streaming, it only is possible to work with data, programs, or log files when the files are stored on a share drive (such as the H drive) or on OneDrive. SAS cannot work with files that are stored locally (on your laptop or desktop or home computer). Also, files saved in local directories will be lost upon logging off. This means that you must use your OneDrive account to save your work. This drive usually is mapped to the O: (oh) drive on the computer that you are using. In addition, SAS is a bit slow when using desktop streaming so be patient! It will work eventually, but it will take longer than you are accustomed to.

A WORD OF WARNING ABOUT THIS CLASS CONVERTING TO REMOTE DELIVERY:
It is possible that this class will be converted into an on-line format at some point. If that happens, all lectures will be delivered at the normal class time via Zoom. Therefore, you must have access to a computer with a camera, microphone, and a quiet place to view the lecture. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn.

COVID-19 IMPACT ON ATTENDANCE:
While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community in light of COVID-19, the flu, and other such conditions. If you are sick, it may be in the best interests of everyone for you not to attend class. If you are experiencing any symptoms of the flu or COVID-19, please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.
HOUSE RULES:

1. No food or drink in the lab.
2. Turn off cell phones and all electronic devices during class time.
3. **DO NOT WORK ON YOUR COMPUTER DURING LECTURE.**
4. Question everything! Always ask "Why?" and "Does this make sense?" Be curious!

UNT POLICIES:

**Academic Integrity Policy:**

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

**Emergency Notification & Procedures:**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

**ADA Policy:**

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu.

**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 Dean of Students 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 deanofstudents.unt.edu/conduct.
Access to Information – Eagle Connect:
Students’ access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail: eagleconnect.unt.edu/

Technical Assistance:
At some point, it might be necessary for us to convert to remote delivery of this class. If that happens, here are some resources for you to help ease the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UNT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8 AM to 9 PM
Telephone Availability:
• Sunday: noon to midnight
• Monday-Thursday: 8 AM to midnight
• Friday: 8 AM to 8 PM
• Saturday: 9 AM to 5 PM

Laptop Checkout: 8 AM to 7 PM
For additional support, visit Canvas Technical Help https://community.canvaslms.com/docs/DOC-10554-4212710328)

Rules of Engagement:
Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

• While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law will not be tolerated.
• Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
• Ask for and use the correct name and pronouns for your instructor and classmates.
• Speak from personal experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individual’s experiences.
• Use your critical thinking skills to challenge other people’s ideas, instead of attacking individuals.
• Avoid using all caps while communicating digitally. This may be interpreted as “YELLING!”
• Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
• Avoid using “text-talk” unless explicitly permitted by your instructor.
• Proofread and fact-check your sources.
• Keep in mind that online posts can be permanent, so think first before you type.
See Engagement Guidelines (https://clear.unt.edu/online-communication-tips) for more information.

**Sexual Assault Prevention:**
UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment, sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

**Prohibition of Discrimination, Harassment & Retaliation:**
Consistent with Policy 16.004, he University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

**Your Mental Health:**
Just as with your physical health, your mental health is VERY important to me. We are living in stressful and uncertain times. A great deal of attention has been paid, lately, to our physical health, but I want to remind you that there is help for our mental health too. UNT’s Student Health & Wellness Center, the Counseling Center, and the Care Team are staffed with many wonderful people who wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Please do not be afraid to reach to these caring professionals during this very difficult time; it really can help. DO NOT feel ashamed if you experience a crisis or if you are stressed out! Nearly everyone goes through some type of mental health issue at some point in their life—even the people who seem to be completely in control and who look totally “normal.” Begin with the links below:

Student Health & Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
UNT Care Team (https://studentaffairs.unt.edu/care)
UNT Psychiatric Services (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)
Retention of Student Records:

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year.

Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.