COURSE OBJECTIVES:
This course focuses on empirical applications of non-linear and non-ideal regression models. The objective is to provide students with the tools necessary to organize, analyze, and interpret data using non-linear regression analysis, and write an applied research paper. Students will explore an assortment of applied problems that are typically encountered in accounting, economics, finance and political science. At the completion of the course, students will develop proficiency in the following areas: (1.) finding, collecting and organizing data; (2.) applying appropriate estimation techniques for various econometric problems; (3.) interpreting econometric results and computer output; and (4.) presenting and explaining econometric results in a manner accessible to both informed and uninformed audiences. In addition, students will gain familiarity with the statistical software packages Stata and SAS (Statistical Analysis System).

PRE-REQUISITES:
The pre-requisite for this course is a grade of "B" or better in ECON 5650 (Advanced Econometrics).

TEXT:
The recommended text for this course is the same one that you used for ECON 5650: Econometric Analysis, by W. Greene (publisher: Pearson). The current version of this book is the 8th edition, published in 2018. However, it also is acceptable to use the 7th edition of this book. In addition, your class notes from ECON 5650 will be a valuable source of background information for this class.

GRADING POLICY:
Grades for this course will be assigned based on your cumulative point total as follows:

<table>
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<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Mini research project #1 (OLS)</td>
<td>25</td>
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<tr>
<td>Mini research project #2 (probit)</td>
<td>40</td>
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<tr>
<td>Mini research project #3 (censored regression)</td>
<td>55</td>
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<tr>
<td>Proposal for research paper</td>
<td>10</td>
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<td>Final research paper</td>
<td>100</td>
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<td>Final Exam</td>
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<td><strong>Total</strong></td>
<td><strong>350</strong></td>
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Students who accumulate 90% or more of the total points possible will earn a grade of "A;" students who accumulate 80% to 89% of the total points possible will earn a grade of "B."

The final exam is scheduled for the Monday evening of finals week, December 9th, from 6:30 PM to 8:30 PM, in room 141 of the Gateway Center. A formula sheet and calculator will be provided.

Your research paper should present an original applied example of one or more of the topics covered in the course. Students will be expected to: gather their own data sets; describe the purpose of their analysis; provide descriptive statistics on the data set used; describe the model and estimation procedure used; perform appropriate estimation; employ appropriate diagnostic tests; and, report, explain, and interpret the empirical results (papers also will be graded on grammar and spelling). You will have to submit your data set with your final paper. The final copy of your research paper is due by email submission (doc or pdf file) no later than 3 PM on Monday, December 9th. More details will be supplied at a later date (October 14th).

The mini research projects will be similar to the main research project in every respect except that the data set and details of the analysis will be provided for you.

SOFTWARE:
The software packages used in this course are Stata, version 13 (or higher), and PC SAS, version 9.4 (or higher). If you want to get the maximum benefit from this class, you should put a lot of effort into learning these software packages! You should plan on spending a lot of time in the general access labs on campus to use SAS (you will need your student ID). Below are the hours and location of each of the general access labs supported by the College of Arts & Sciences.

LOCATION AND HOURS OF OPERATION* OF CAS GENERAL ACCESS LABS:

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<tr>
<th></th>
<th>GAB 330</th>
<th>GAB 550</th>
<th>Terrill 220</th>
<th>Wooten 120</th>
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<td>Monday through Thursday</td>
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<td>Friday</td>
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<td>Sunday</td>
<td>12 noon – midnight</td>
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<td>Exceptions</td>
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<td>open on Nov. 30</td>
<td>closed after Dec. 6</td>
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*Times and dates are subject to change without notice; please check the official schedule at: https://itservices.cas.unt.edu/services/labs
COURSE SCHEDULE AND READINGS:

AUGUST 26:
Topic #1: Introduction to SAS & Stata

Receive Mini Research Project #1 (OLS)
Readings: Lecture notes from ECON 5650, and:

SEPTEMBER 2:
Labor Day holiday; class does not meet. Work on mini research project #1.

SEPTEMBER 9:
Mini Research Project #1 due by email, no later than 3 PM

Receive Mini Research Project #2 (Probit)
Topic #2: Probit & Logit
Readings: Lecture notes from ECON 5650, sections 17.1 – 17.4 of Greene, and:

SEPTEMBER 16:
Topic #3: Simultaneous Equations and Endogenous Regressors
Readings: Lecture notes from ECON 5650, and chapter 10 of Greene

Topic #4: Maximum Likelihood Estimation
Readings: Lecture notes from ECON 5650, chapter 14 of Greene, and:


**SEPTEMBER 23:**

**Mini Research Project #2 due by email, no later than 3 PM**

**Receive Mini Research Project #3 (Censored Regression)**

Topic 5: Censored Regression

Readings: Lecture notes from ECON 5650, sections 19.1 – 19.3 of Greene, and:


**SEPTEMBER 30:**

Topic 6, part 1: Ordered Multivariate Response Models and Ordered Probit

Readings: Lecture notes from ECON 5650 and section 18.3 of Greene

Topic #6, part 2: Unordered Response Models and Multinomial Logit

Readings: Lecture notes from ECON 5650, sections 18.1 & 18.2 of Greene, and:

OCTOBER 7:

Mini Research Project #3 due by email, no later than 3 PM

Topic #7: Panel Data

Readings: chapter 11 of Greene, and:


OCTOBER 14:

Receive instructions for research papers and proposals.

Topic #8: Count Data

Readings: Notes from ECON 5650, section 18.4 of Greene, and:


OCTOBER 21:

Topic #9: Fractional Response Models

Readings: handout and:


OCTOBER 28:

Research paper proposals due by email, no later than 3 PM

Topic #10: Heteroskedasticity & Robust Standard Errors

Readings: Notes from ECON 5650 and chapter 9 of Greene.
NOVEMBER 4:

Topic #11: Non-constant Parameters & Structural Change

Readings: Section 6.6 of Greene, and:


Scott, C.P. (2012), "Using Time Varying Monetary Policy Parameters to Identify Asymmetric Preferences," Kansas State University working paper

NOVEMBER 11:

OPTIONAL: "First read" of research papers due by email, no later than 3 PM

Topic #12: Applications

Readings: handout

NOVEMBER 18:

Receive graded copy of "first read" of research paper (if applicable)

Work on research papers.

NOVEMBER 25:

Receive practice final exam.

Work on research papers.

DECEMBER 2:

Q & A session for final exam.

DECEMBER 9:

Final research papers (and clean copy of data set) due by email, no later than 3 PM.

Final exam, 6:30 PM to 8:30 PM, Gateway 141.
CLASS HANDOUTS:
On the first night of class, I will bring a copy of all of the necessary handouts for you. After the first night, YOU will be responsible for bringing all of the handouts yourself. My plan is to make all handouts for a given Monday night available on Canvas by noon on the preceding Wednesday.

EMAIL POLICY:
If I need to contact you to convey class-related information, in keeping with University policy, I ONLY will use your official UNT email address. Thus, it is YOUR responsibility to check your UNT email on a regular basis. If you send an email to me, please only use your official UNT email account. In addition, I typically receive a large volume of emails each day and so it is not possible for me to read all of my emails every day. Therefore, if you send me an email, 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 email in a timely manner, you should do the following: (1.) use the phrase "ECON 5670" in the subject heading; (2.) include your full name in the "from" line; (3.) sign your email using your full name.

If you email me a question about your SAS work, please cut and paste the contents of your log window into a Word file and send that to me.

CLASSROOM POLICY:
During class time (including exams) students are forbidden to have or use electronic devices such as laptop computers, tablets, iPods, 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.

A WORD OF WARNING ABOUT 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.

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.** Don't even touch it!
4. Do not sit by yourself! In order to get the most out of this class, you need to work together with your classmates and share ideas. You cannot do that if you are by yourself.
5. Only print material related to this class in this lab. DO NOT print once class begins.
6. Question everything! Always ask "Why?" and "Does this make sense?" Be curious!
7. When working in SAS, always check the log window FIRST (starting at the TOP).
ADA STATEMENT / DISABILITY ACCOMMODATION:

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact them by phone at 940.565.4323.

CHEATING & 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

The minimum penalty for cheating and/or plagiarism is a grade of "F" in the course. The maximum penalty is expulsion from the University. Anyone suspected of cheating and/or plagiarism will be reported to the Office of Student Rights and Responsibilities, and I will prosecute cheating and/or plagiarism to the fullest extent allowable.

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

1. giving or receiving of any unauthorized assistance during exams 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.
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](http://www.unt.edu/csrr).

GENERAL INFORMATION

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

2. Plan to be here the full 3 hours every night (including the first night of class).

3. If you MUST arrive late or depart early, do so quietly.

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 chewing gum if you are falling asleep).

5. Ask questions at any time.

6. DURING CLASS & EXAMS, YOU ARE NOT PERMITTED TO USE*:
   - LAPTOPS, TABLETS
   - CELL PHONES
   - MUSIC/VIDEO PLAYERS
   - OTHER ELECTRONIC DEVICES
   - OR ANYTHING THAT MAKES USE OF EARPHONES OR EAR BUDS

   *except for devices that have been approved for use by individuals with special needs.

If you ever have a question about your SAS work, please cut and paste a clean copy of the contents of your log window into a Word file and either bring or email that to me.