Quant II: Regression
PSCI 6321, Spring 2021
Wednesday 2:00PM-4:50 PM, Remote

INSTRUCTOR:
Professor Regina Branton
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Office Hours: Wednesday 11:00 AM-2:00 PM, Remote
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COURSE DESCRIPTION:
This course will examine the properties of Ordinary Least Squares (OLS) regression, the underlying assumptions, the consequences of violating these assumptions, how to detect violations, and how address violations. This course builds on PSCI 5340 (Scope and Methods) and PSCI 6320 (Quant I). OLS is designed for continuous dependent variables; however, the basic form of the linear model is extended to an array of models for limited/categorical dependent variables. The course will briefly introduce you to some extensions of OLS which will be the focus pf the Maximum Likelihood Estimation (MLE) course. Thus, gaining a clear understanding of OLS regression is an essential building block in your methods training. The class will be a mixture of mathematical topics and applied topics.

COURSE OBJECTIVES:

1. Be able to explain the basic logic of multivariate statistical analysis
2. Understand the math behind OLS
3. Know when regression is and is not an appropriate analysis technique
4. Be able to interpret and critique multivariate results in journals
5. Be able to apply appropriate techniques to your own data
6. Be proficient with a stistical software package to analyze data
7. Correctly interpret and report your results.

EXPECTATIONS:

1. Successful students spend many more hours outside of class than in class in order to meet the student learning objectives. This is not a course where simply attending class means that you will master the material. You need to put in the work outside of class if you expect to do well in this course.

2. You are required to read the assigned material before class and review the readings again after class. It will take time to complete the assigned readings. You will likely have to read some sections several times. We will not be able to cover every detail in the readings in class. Class time will be devoted to nailing down the basics, understanding conceptually what is going on, and getting you to the point of knowing how and when to use the methods we have discussed. There will always be more to cover than time to cover it in. We only meet once a week, but if you only think about this stuff and/or work on it once a week, you will not get it. You need to review this material and work with it on a regular basis if you really want to learn it. It is also true that many topics in this course will depend upon things we learn in earlier weeks, which provides another obvious reason why keeping up with the material is important.

3. Attendance is mandatory. **If you miss 2 or more classes with out a documented excuse you will automatically receive a failing grade in this class**. Below is the policy outlined by the Dean of Students regarding excused absences.

   "Students are expected to attend classes regularly and to abide by the attendance policy established by the professor. However, the university is aware that there will be times when a student is unable to attend class due to emergency situations, health or the death of a loved one. The Dean of Students Office is also available to assist you with documenting your absence. Students must provide the Dean of Students with official and verifiable documentation related to the reason for absence. Once the absences have been verified the decision to allow a student to make up course work is left to the discretion of the professor and/or the department."

4. You can only learn statistics by doing statistics. In recognition of this fact, you are required to complete several homework assignments. You will be required to work with statistical software extensively. Statistical software is best learned by doing. There are many on-line resource available to help you learn how to manage data, recode data, estimate models, perform diagnostics and post-estimation procedures. For example, https://idre.ucla.edu is a great resource.

5. All work must be submitted by the deadline. **NO LATE ASSIGNMENTS WILL BE ACCEPTED.**

REQUIRED MATERIAL:

Weekly readings will be posted on the course Blackboard.

RECOMMENDED MATERIAL:

A Guide to Econometrics. Kennedy, Peter. Cambridge: The MIT Press.

COURSE REQUIREMENTS:

25% – Problem Sets

There will be approximately 3 to 4 problem sets. The problem sets will be a mix of analytic and computer-based problems. The goal of the problem sets is to help you learn the material and enable you to perform well on the research paper. You are welcome to work together on the problem sets; however, you must write up your problem set on your own, and run the code yourself. Simply copying another student's work is **not** permitted and will be treated asacademic dishonesty. **Late assignments will not be accepted.**

50%–Exams

There will be two exams in this class: a midterm (25% of your grade) and a final (25% of your grade). The exam will include an in-class and take home portion. The in-class exam will be given during regurlarly scheduled class time. The take home portion of the exam will involve computer-based problems. You must complete the take home exam within forty-eight hours of receipt, and must submit a typed answer sheet. You **may not** consult anyone for advice on the in-class or take home exam. You **may not** use any on-line resources to complete the in-class or take home exam. **Make-up exams will not be given.**

25%–Research Paper and Presentation

The paper/project is designed to be a piece of original quantitative analysis conducted by you during the course of the semester. The paper will be an original research paper on a substantive topic of your own choosing. The paper will include a full literature review, discussion of the research design, develop and test hypotheses, describe and interpret **in detail** the results of those tests, and reach some conclusions. The only restriction is that it must be based on the statistical analysis of some data that employs methods discussed in this class (basically anything using multiple regression or beyond). **NOTE: you cannot use a method that is not covered in this class.** If you have concerns about the appropriateness of OLS for your paper, or if you need assistance in developing a paper topic, you should consult with me early in the semester. There is no formal page length, but I expect the paper will constitute 14-20 pages of text.

You are required to submit a description of the topic/research question you plan to study on **March 17**th. The final version of the paper is due on **April 21**st. You are required to upload your final paper via the "Research Project" Turnitin assignment on Canvas. No late papers or presentations will be accepted. During the last class on **April 21**st, each student will present his/her research project to the class. This presentation must include an electronic presentation, as well as a verbal presentation. **Late assignments will not be accepted.**

Course Grading Scale:

A	B	C	D	F
100-90%	89.9-80%	79.9-70	69.9-60%	<60%

Accommodations (ODA/ADA)
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.

Department of Political Science–POLICY ON CHEATING AND PLAGIARISM
The UNT Code of Student Conduct and Discipline defines cheating and plagiarism as the use of unauthorized books, notes, or otherwise securing help in a test; copying others' tests, assignments, reports, or term papers; representing the work of another as one's own; collaborating without authority with another student during an examination or in preparing academic work; or otherwise practicing scholastic dishonesty. Normally, the minimum penalty for cheating or plagiarism is a grade of "F" in the course. In the case of graduate departmental exams, the minimum penalty shall be failure of all fields of the exam. Determination of cheating or plagiarism shall be made by the instructor in the course, or by the field faculty in the case of departmental exams. Cases of cheating or plagiarism on graduate departmental exams, theses, or dissertations shall automatically be referred to the departmental Graduate Studies Committee. This committee, acting as agents of the department Chair, shall impose further penalties, or recommend further penalties to the Dean of Students, if they determine that the case warrants it. In all cases, the Dean of Students shall be informed in writing of the case. Students may appeal any decision under this policy by following the procedures laid out in the UNT Code of Student Conduct and Discipline. Students in this class should review the policy (UNT Policy Manual Section 18.1.16), which may be located at http://policy.unt.edu/sites/default/files/untpolicy/pdf/7-Student_Affairs-Academic_Integrity.pdf. Violations of academic integrity in this course will addressed in compliance with the penalties and procedures laid out in this policy. Students may appeal any decision under this policy by following the procedures laid out in the UNT Policy Manual Section 18.1.16 "Student Standards of Academic Integrity."

Classroom conduct
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 www.unt.edu/csrrlla. In short, please be considerate of others.

SEXUAL DISCRIMINATION, HARRASSMENT, & ASSAULT
UNT is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these acts of aggression, please know that you are not alone. The federal Title IX law makes it clear that violence and harassment based on sex and gender are Civil Rights offenses. UNT has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

UNTs Dean of Students website offers a range of on-campus and off-campus resources to help support survivors, depending on their unique needs: http://deanofstudents.unt.edu/resources_0. Renee LeClaire McNamara is UNT's Student Advocate and she can be reached through e-mail at SurvivorAdvocate@unt.edu or by calling the Dean of Students office at 940-565-2648. You are not alone. We are here to help.

Canvas
A Canvas conference is maintained for this course. Students are responsible for checking Canvas for assignments and notices. You should check Canvas at least every 48 hours to ensure that you are up to date on all class related information.

Course Schedule:

January 13	Introduction	
January 20	Preliminaries	Moore & Siegal
January 27	Simple Regression	Readings 1
February 3	Assumptions & Properties	Readings 2
February 10	Properties & Inference	Readings 3
February 17	Lab & Review	
February 24	EXAM 1	
March 3	Collinearity & Heteroscedasticity	Readings 4
March 10	Autocorrelation	Readings 5
March 17	Regression with Dummies	Readings 6
March 24	Logit & Probit	Readings 7
March 31	Lab & Review	
April 7	EXAM 2	
April 14	Research Week	
April 21	Student Presentations	Paper Due at Start of Class

Revision to Syllabus
I reserve the authority to change requirements by providing you with a 48 hour notice in class and on Blackboard. You are responsible for any changes that occur during the semester.