

SOCI 4900.703 Special Problems - Intermediate Statistics - Regression

Course Instructor and Contact Information

Instructor: Dr. Cynthia M. Cready, Associate Professor of Sociology

Campus Office Location: 288F Sycamore Hall, Department of Sociology, College of Liberal Arts and Social Sciences, University of North Texas (UNT)

On-Campus Office Hours: Wednesdays, 3:00PM-5:00PM and by appointment

Cell Phone: (940) 390-9653

Email: Use the Inbox button in the Canvas Learning Management System (Canvas) to email me. When you send your message, it will go to my UNT email address. The Inbox button (represented by the “box with sheet of paper sticking up out of it” icon) is located on the left side of your computer screen after logon to Canvas. I will make every effort to respond to your message within 24 hours.

Class Meeting Venue and Schedule

Course Delivery: In-person

Class/Lab Time: Mondays, 6:00PM-8:50PM

Classroom/Lab: 550A GAB

Course Prerequisite

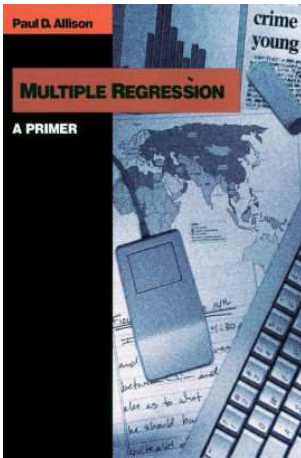
You must have passed SOCI 5210 Introduction to Social Statistics or equivalent with a “C.”

Course Description

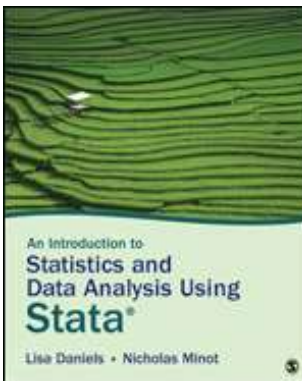
This course is an intermediate statistics course. The main objective of the course is to provide you with a working knowledge of regression analysis and related techniques commonly used in sociological research. Emphasis will be placed on the appropriate application of these methods and the interpretation of results. You will also be introduced to the use of Stata—a general purpose statistical software packages widely used in academia. After completing the course, you should be able to read and interpret intelligently and critically the results of most published data analyses that use the types of analyses and techniques covered in the course. You should also be able to apply them successfully in your own research. Each three-hour class typically will consist of approximately a two-hour lecture/presentation and an approximately one-hour lab session. To make sure all are on the same page, we will review some of the material covered in SOCI 5210 during the first several class/lab sessions. For your convenience, a copy of the SOCI 5210 textbook (i.e., the “recommended” textbook below) has been placed on reserve at Willis Library.

Course Materials

Required Textbooks



1. Allison, P. D. (1998). *Multiple regression: A primer*. Thousand Oaks, CA: Pine Forge Press. ISBN: 9780761985334 (Hereafter referenced as Allison.)



2. Daniels, L., & Minot, N. (2019). *An introduction to statistics and data analysis using Stata®: From research design to final report*. Thousand Oaks, CA: Sage. ISBN: 9781506371832 (Hereafter referenced as D&M.)

Recommended Textbook



1. Frankfort-Nachmias, C., Leon-Guerrero, A., & Davis, G. (2020). *Social statistics for a diverse society* (9th ed.). Thousand Oaks, CA: Sage. ISBN 9781544339733 (Hereafter referenced as SSDS.)

Data & Stata

For some examples and some of the assignments throughout the semester, we will be using data drawn from various years of the General Social Survey (GSS). Go to the [GSS](#) website for a detailed codebook. Other public-use datasets may also be used in this course as well. Datasets needed for the lab/homework assignments will be posted to the course website in Canvas. Although we will be performing many of the Stata statistical software procedures together in class/lab sessions, you will need access to the software. To purchase Stata, visit [Stata Student Pricing](#) (click link) and follow the prompts. The BE version should be sufficient for this course. If you do not want to purchase the software, you may access it on the designated computer in the Department of Sociology's Teaching Assistant Office or from a computer in a UNT Student Computer Lab either in the lab (see [Find a Student Computer Lab](#)); or remotely using the newly available desktop streaming service. Click on [Desktop Streaming Service](#) for details regarding this service.

Calculator

Bring a calculator with square root, natural logarithm (\ln), and natural exponential (e^x) function to each class/lab session.

Flash Drive

You may want to bring a USB drive to each class/lab session on which to save any in-class/lab work.

Course Delivery & Organization

The course will be delivered in person.

If circumstances warrant, lecture capture technology may be used to record class sessions. Only audio and slide capture will be used. Although the instructor's image may be recorded, students' images will not be recorded. Recordings will be posted to the course website in Canvas for student reference and may be used in future course offerings.

Any class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise

share the recordings outside the class, or outside Canvas, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Course Technology & Skills

Computer Skills & Digital Literacy

Although course delivery is in person, the course has digital components. Course materials will be posted to the course website in Canvas. Thus, to fully participate in this class, students will need internet access to reference content in Canvas. If circumstances change, you will be informed of other technical needs to access course content. Information on how to be successful in a digital learning environment can be found at [Learn Anywhere](#).

Course-specific technical skills learners must have to succeed in the course:

- Using Canvas
- Using email with attachments
- Downloading and installing word processing and presentation software (e.g., Microsoft Office 365) (See [Software Downloads](#).)
- Accessing statistical software packages (e.g., , Stata, SPSS for Windows) (See [Software Downloads](#).)
- Scanning pages of an assignment into a single document pdf file

Technical Assistance

Part of working in the online environment involves dealing with 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.

UIT Help Desk: [UIT Student Help Desk website](#)

Email: helpdesk@unt.edu

Phone: (940) 565-2324

In Person: Sage Hall, Room 330

Walk-In Availability: Monday – Friday, 8:00AM – 5:00PM

Telephone Availability:

- Monday – Thursday: 8:00AM – 9:00PM
- Friday: 8:00AM – 5:00PM
- Saturday – Sunday: 11:00AM – 3:00PM

Laptop Checkout: For details, see [Laptop Checkout Program](#).

For additional support, visit [Canvas Basics for UNT Students](#).

Course Requirements

Lecture/Lab Attendance

Because the course material is cumulative, it is essential that you attend all lectures/presentations and computer lab sessions and keep up with the readings and lab/homework assignments.

Reading Assignments

You are responsible for reading the assigned materials before the class period indicated on the attached course outline.

Lab/Homework Assignments

There will be five open book take-home lab/homework assignments/problem sets. Each is worth 6% and collectively count 30% toward your final course grade. The lab/homework assignments are designed to apply material learned in class and to prepare you for further application of the material on the midterm exam and in the research note/paper. Each assignment will include Stata applications. Assignments may be divided into parts that are released separately at different times.

Please do not include lab/homework questions in your answer document. Answers to the questions should be numbered and typed (or written neatly) in complete sentences and all pages saved as a single document in a .pdf file using your last name and the lab/homework assignment number (e.g., YourlastnameHW1). If you type your answers, please learn how to use Microsoft Word's equation editor to report mathematical expressions correctly. In addition, be sure to include Stata output and/or tables and figures constructed from this output in your answer document when instructed to do so. Use the dedicated submission link provided for the lab/homework assignment on the Modules page of the course website in Canvas to upload your answer document. Points may be deducted for assignments submitted past their due date (typically, on a Friday at 11:59PM). Every effort will be made to provide feedback on a lab/homework assignment before the next one is due.

Getting Help with a Lab/Homework Assignment

If you need help with a lab/homework assignment, contact me using the Inbox button in Canvas. When you send your message to me using this function, it will go to my UNT email address. Every effort will be made to respond to your email within 24 hours. You may also make an appointment to meet with me online via Zoom. You may discuss lab/homework assignments amongst yourselves, but all final work must be your own. Both giving/getting unauthorized help and copying another student's work are violations of UNT's [Code of Student Conduct](#).

Re-doing a Lab/Homework Assignment

If you are disappointed with your performance on a lab/homework assignment, you have until the next class meeting after your answers have been graded and returned to you to improve your score. Specifically, you may submit a revision to earn up to one-half of the points you missed on the original submission. In submitting a revision, add revisions to the original submission using **red font**.

Server Unavailability or Other Technical Difficulties

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, I will extend the time windows and provide an appropriate accommodation based on the situation. You should immediately report any problems to me and contact the UNT Student Help Desk: helpdesk@unt.edu or (940) 565-2324. Obtain, record, and retain your incident report number from the UNT Student Help Desk. We will work with you to resolve any issues at the earliest possible time.

Midterm Examination

There will be one in-class, closed-book exam on **Monday, April 1, 2024 at 6:00PM**. This exam will cover material from Weeks 1-8. Example questions and answers from past exams will be provided to you at

least a week before the midterm for practice and review. You will not be required to use Stata or any other statistical software package for the exam. The exam constitutes 30% of your final course grade.

Final Research Project

Students will use either linear regression or logistic regression and readily available secondary data to **replicate or reproduce** a published analysis and write an **approximately 12-page** (not including the title page, abstract, or reference list) **paper** about it. You should prepare it as a manuscript for submission to a peer-reviewed sociology journal. It should include a title page, abstract, and the following sections:

1. an introduction that identifies and summarizes the original article's research question and hypothesis, methods, and findings;
2. a section that describes the nature of your replication of the original analysis ("exact" replication or conceptual replication in a different geographical area, time period, or set of participants);
3. a description of your data source and sample, measures, and analytical approach;
4. a presentation of your findings in textual and tabular format;
5. a discussion of the findings and their relation to the original article's findings.

Formatting instructions for the project include: using APA or ASA style guidelines ([APA](#); for ASA check the style guide on reserve at Willis Library) to provide proper attribution to sources used; starting the list of references on a separate page; typing and double-spacing the paper; and using Times New Roman 12-point font and standard one-inch margins. Points will be deducted for failure to follow these instructions.

The research project is due **Wednesday, May 8, 2024 at 11:59PM**. Submit it using the dedicated submission link on the course website in Canvas.

Your proposed project topic must be approved by me. To facilitate the approval process, you are required to meet with me individually **at least once before 11:59PM Friday, March 8, 2024**. You are also required to submit a **two-page summary and a list of about ten scholarly sources** (peer-reviewed articles, books, and book chapters) **related to your topic** (on a separate page, using APA style guidelines).

The summary should address the following. What published analysis are you replicating? What is the nature of your replication (i.e., "exact" or conceptual)? What is the research question? What is(are) your hypothesis(es)? Identify your outcome or dependent variable and the explanatory or independent variables. What data set will you use? How will your variables be measured? (For example, you might indicate that: "The independent variables include gender (1=female, 0=male), education (highest year of schooling completed, from 0 to 20 or more) ...", etc.) Finally, what is your analytical strategy? That is, will you estimate linear regression models or binary logistic regression models?

If you would like to use a paper that you are currently preparing or extend a paper that you have already prepared for another course, you will need to discuss this with me (and the other instructor, if relevant) **before** you submit your summary so that we can decide what differences/additions will be necessary. Type and single-space the summary and reference list. Use Times New Roman 12-point font and standard one-inch margins. Submit the summary and reference list by **11:59PM Friday, March 22, 2024**.

After submission of the project summary, a second one-on-one meeting with me about the project is required before **11:59PM Friday April 26, 2024**.

The one-on-one meetings, summary, and paper collectively count for 40% of your final course grade.

Estimated Time Commitment

As a reminder, the outside-class time commitment is substantial, and expected to average about nine hours per week on the readings, lab/homework assignments, and research project.

Evaluation

Grading

To summarize, course grades are based on the scores of seven graded components, five lab/homework assignments or problem sets (30%), a midterm examination (30%), and a research project (40%). Scores on all graded components use a 100-point scale. For the course grade, the following numerical ranges translate into letter grades: A=90-100; B=80-89; C=70-79; D=60-69; F=59 or lower.

Please note that a grade of Incomplete (I) is for extenuating circumstances. It must be requested in writing during the last one-fourth of a semester, must be accompanied by documentation of the reason that the course cannot be completed before the end of the term, and is only considered if at least 50% of course assignments and exams have been completed with a passing grade.

Extra Credit

Opportunities to earn “bonus” points may be offered at my discretion. Any such opportunity will be offered to the class as a whole.

UNT Policies

Academic Integrity

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. In this course, academic dishonesty also includes using and submitting AI-generated content as your own. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. In this course, a graded assignment compromised by academic dishonesty will earn a zero.

Disability Access

UNT makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (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, refer to the [Office of Disability Access](#).

Prohibition of Discrimination, Harassment, and Retaliation

According to UNT Policy 16.004, Prohibition of Discrimination, Harassment, and Retaliation, 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.

Emergency Notification and 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 the course website on Canvas for contingency plans for covering course materials.

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.

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. Visit UNT's [Code of Student Conduct](#) to learn more.

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. Click on [Eagle Connect](#).

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 based on 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.

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the [SPOT website](#) or email spot@unt.edu.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses. See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](#).

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the [Student and Exchange Visitor Program](#) website. The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f) (6) (G).

The paragraph reads:

“For F–1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F–1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.”

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

1. Submit a written request to the instructor for an on-campus experiential component within

one week of the start of the course.

2. Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the UNT International Student and Scholar Services (ISSS) Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about their need to participate in an on-campus experiential component for this course, they should contact the UNT ISSS Office (internationaladvising@unt.edu) to get clarification before the one-week deadline.

[Academic Support & Student Services](#)

Student Support Services

- [Student Health and Wellness Center](#)
- [Counseling and Testing Services](#)
- [UNT Care Team](#)
- [UNT Psychiatric Services](#)
- [Individual Counseling](#)
- [Registrar](#)
- [Financial Aid](#)
- [Student Legal Services](#)
- [Career Center](#)
- [Counseling and Testing Services](#)
- [UNT Food Pantry](#)

Academic Support Services

- [Academic Resource Center](#)
- [Academic Success Center](#)
- [UNT Libraries](#)
- [Writing Lab](#)

NOTE: The following schedule is subject to change. Any change will be posted to the course website in Canvas.

Weekly Class Schedule

Date	Topic	Readings	Due
Week 1, M 01/15	Martin Luther King, Jr. Day – No class meeting		
Week 2, M 01/22	Variables & Their Distributions	<u>Required:</u> (Review) D&M, Chapters 1-6 & 11 <u>Recommended:</u> (Review) SSDS, Chapters 1-4, 9-10	F 01/26 11:59PM, Lab/Homework 1, Part A
Week 3, M 01/29	Cross-tabulations		F 02/02 11:59PM, Lab/Homework 1, Part B
Week 4, M 02/05	Correlation & Index Construction	<u>Required:</u> Allison, Chapters 1, 5 & 9 (pp. 175-176) D&M, Chapter 12 (pp. 190-195) <u>Recommended:</u> SSDS, Chapter 12 (pp. 325-326; pp. 345-346)	F 02/09 11:59PM, Lab/Homework 1, Part C
Week 5, M 02/12	Bivariate Regression	<u>Required:</u> Allison, Chapters 1, 5 & 9 (pp. 175-176) D&M, Chapter 12 <u>Recommended:</u> SSDS, Chapter 12	
Week 6, M 02/19	Multiple Regression	<u>Required:</u> Allison, Chapters 2 & 4 D&M, Chapter 12 <u>Recommended:</u> SSDS, Chapter 12	F 02/23 11:59PM, Lab/Homework 2
Week 7, M 02/26	Categorical Independent Variables & Interactions	<u>Required:</u> Allison, Chapters 1 (pp. 9-10), 2 (esp. pp. 45-46), 8 (pp. 166-174) & 9 (pp. 175-176) D&M, Chapter 12 (pp. 203-210)	
Week 8, M 03/04	Nonlinear Effects	<u>Required:</u> Allison, Chapters 8 (pp. 153-166; 171-174) & 9 (pp. 184-187) D&M, Chapter 13 (pp. 229-234) & Appendix 8	F 03/08 11:59PM, Lab/Homework 3 & Required 1-on-1 Meeting with Instructor about Research Project
Week 9, M 03/11	Spring Break! – No class meeting		
Week 10, M 03/18	Regression Diagnostics	<u>Required:</u> Allison, Chapters 3, 4 (pp. 89-93), 6 & 7 D&M, Chapter 13	F 03/22 11:59PM, Lab/Homework 4 & Research Project Summary
Week 11, M 03/25	Catch-up & Review for Exam (Weeks 1-8)		

Date	Topic	Readings	Due
Week 12, M 04/01	Exam		M 04/01 9:00PM Midterm Exam
Week 13, M 04/08	Logistic Regression	<u>Required:</u> D&M, Chapter 14	
Week 14, M 04/15	Logistic Regression (cont'd.)		
Week 15, M 04/22	Logistic Regression (cont'd.)		F 04/26 11:59PM Lab/Homework 5 & Second 1-on-1 Meeting with Instructor about Research Project
Week 16, M 04/29	Special Topics, Open Lab, Work Session		
Week 17, M 05/06	No Class Meeting		W 05/08 11:59PM Research Project