MATH 3680.400/401 Applied Statistics INET

Summer 2026 10W

Instructor Contact

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(not required)

Course Description

3 hours. This is a Applied Statistics course about descriptive statistics, elements of probability, random variables, confidence intervals, hypothesis testing, regression and contingency tables.

Course Prerequisites

Math 1710 and 1720, or MATH 1810, 1820 and 1830

Course Objectives

By the end of this course, students will be able to:

- Make intelligent judgments and informed decisions in the presence of uncertainly and variation.
- Investigate randomness and uncertainty.
- Develop probability models for a single discrete/continuous random variable.
- Create and analyze statistical estimators
- Examine confidence intervals and hypothesis-testing procedures for single data set.
- Examine confidence intervals and hypothesis-testing procedures for two sets of paired/unpaired data.
- Analyze if two variables are related and how strong that relationship is.

Communication Expectations

If you have a question about the contents of the course or homework, connect to Zoom during office hours for help. I will check my email every day (except weekends and holidays) and will make every effort to respond within 24 hours.

Required Texts

The textbook is Probability and Statistics for Engineering and the Sciences, by J. Devore, ninth edition. **It is available online through WebAssign platform.**

Cengage WebAssign Required

WebAssign is accessed directly through Canvas. It includes all online homework assignments, the e-textbook and additional learning resources. **Use the link in Canvas to register immediately.** You must register in WebAssign by the 2nd class day of the semester.

What You Should Do Immediately

Log in to Canvas and click the WebAssign link at the top of the module page. Please use **your UNT E-mail address** to register for this course. See Video Tutorial: Access WebAssign from Canvas for more information. WebAssign grants a **no-cost temporary access**. You must purchase your access before the temporary access expires. Students who do not purchase WebAssign by the end of the temporary access period may lose credit for all work previously completed with the possibility of no refund.

I strongly encourage you to get started with Enhanced WebAssign as soon as possible. If you delay, you run the risk of unforeseen technical problems that could prevent you from completing the first assignment. For more directions, please go to the Cengage Zoom office. U of North Texas MATH (cengage.com)

Technical Requirements & Skills

Minimum Technology Requirements

- Computer (smartphone is **not** adequate) with Lockdown Browser for exams
- Reliable internet access
- Speakers
- Purchased access to Webassign online platform
- A scanner or smartphone to make PDFs.
- Webcam with a microphone turned on (Respondus will record video and audio during exams)
- Graphing calculator with statistical functions and/or spreadsheet program
- Canvas Technical Requirements (https://clear.unt.edu/supported-technologies/canvas/requirements)

Computer Skills & Digital Literacy

Students are expected to be proficient at:

- Navigating Canvas and WebAssign
- Uploading documents to Canvas
- Completing assignments on WebAssign
- Scanning documents and creating pdf files (there are several free scanning apps for phones / tablets like Adobe Scan or Office Lens)

Content description:

Sec 1.1-1.4: Overview and Descriptive Statistics: Populations, Samples and Processes, Pictorial and Tabular Methods in Descriptive Statistics, Measures of Location, Measures of Variability

Sec 2.1-2.5: Probability: Sample Spaces and Events, Axioms, Interpretations, properties of Probability, Conditional Probability, Independence

Sec 3.1-3.6: Discrete Random Variables: Probability Distributions for Random Variables, Expected Values, The Binomial Probability Distribution, Hypergeometric and Negative Binomial Distributions, Poisson distribution

Sec 4.1-4.6: Continuous random variables: Probability Density Functions, Cumulative Distribution Functions and Expected Values, The Normal Distribution, Probability Plots.

Sec 5.1-5.5: Joint Probability Distributions: Expected values, covariance, correlation, Distribution of the Sample Mean, Distribution of a Linear Combination

Sec 6.1-6.2, 7.1-7.3: Point estimation and Statistical intervals with one sample: Basic properties of Confidence Intervals, Large-Sample Confidence Intervals for a Population Mean and Proportion, Intervals Based on a Normal Population Distribution

Sec 8.1-8.4: Hypotheses Testing Procedures: Tests About a Population Mean, Tests Concerning a Population Proportion, P-Values

Sec 9.1-9.4 : Two sample inferences: z Tests and Confidence Intervals for a Difference Between Two Population Means, The Two Sample t Test and Confidence Interval, Analysis of Paired Data, Inferences Concerning a Difference Between Population Proportions

Sec 12.1-12.5: Linear regression and correlation: Estimating Model Parameters, Correlation, Regression with Transformed Variables, Correlation

Course/Assignment Schedule

I reserve the right to change this schedule as necessary throughout the semester. You are still responsible for being aware of any changes I announce in class even if you were not in class.

Assignment (Section)	Due Date
Entering answers WA, syllabus quiz	5-22-26
1.2, 1.3, 1.4	5-26-26
2.2, 2.4, 2.5	5-29-26
3.1-3.6	6-5-26
4.1, 4.2, 4.3	6-13-26
4.4	6-16-26
Midterm 1	6-18-26
4.6, 5.1, 5.2, 5.3	6-19-26
5.4, 5.5	6-19-26

6.1, 6.2	6-26-26
7.1, 7.2	7-4-26
Midterm 2	7-9-26
7.3, 8.1	7-10-26
8,2, 8,3, 8,4	7-15-26
9.1, 9.2	7-17-26
9.3, 9.4	7-17-26
12.5	7-21-26
Midterm 3	7-21-26
Final Exam	7-24-26

Grading

Midterms	3 x 25 (lowest dropped, so 50 total)
Homework+Quizzes	20
Final (comprehensive)	30
Total after dropping midterm	100

Grades: A = 90–100 % B = 80–89.9% C = 70–79.9% D = 60–69.9% F = below 60%

Course Policies

Examination Policy

There will be 3 midterm exams and a comprehensive final exam, all administered with **Respondus** and **Lockdown Browser**. No notes or assistance are allowed during exams. After the exam is graded, you have 48 hours to appeal your grade. You may ask me to go over exam problems with you.

Your lowest midterm exam score will be dropped.

Make-up Policy: Make up exams will NOT be given for any reason after the fact. I drop the lowest exam score to cover emergencies which may arise unexpectedly. An exam may be taken prior to the scheduled date if you have a conflict with another obligation and can provide documentation. I require notification a week in advance for this accommodation.

Academic Dishonesty: Cheating (giving or receiving assistance on exams, submitting as your own work answers from tutors, online sites, apps, or any unapproved source, using AI on exams or homework) will not be tolerated. Any student caught cheating will receive a “0” on the assignment and a report will be filed with the Office of Academic Integrity.

I reserve the right to test you on problems that are generalizations of material covered in the class and/or in the text. In short, the problems may not look exactly like the ones in the book. Everything that

is covered in the course content is fair game for exam material. You will be responsible for everything unless I advise you to the contrary.

Homework Policies

All homework assignments are given via WebAssign.

- When you log in, you will be able to see due dates (due time is 11:59pm).
- You have multiple **submissions** for most questions. Your last submission will count as your final answer.
  If you use a help option (Read it, Watch it and Talk to a Tutor), it will count as 1 submission.
- You can save your work without using a submission.
- Some exercises will use randomization. In other words, it's possible that every student will have slightly different questions with accordingly different answers.
- Requests for manual extensions will NOT be granted.
- Quizzes will be given with Respondus LockDown Browser and will be counted as homework

Late Work

The best way to ensure you pass this course is to work consistently throughout the semester. In mathematics courses topics always build one upon the other making it very difficult to catch up later if you fall behind. If you need to pass this course because it is your last semester, your financial aid depends on it, your scholarship depends on it, or your parent/guardian has threatened you in some manner then do yourself a favor and start studying right away. **I will not entertain any pleas for extra credit or offers to do additional work at the end of the semester. Late work will not be accepted in this course regardless of the reason.**

Getting Help

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 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: 8am-9pm
Telephone Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help

(https://community.canvaslms.com/docs/DOC-10554-4212710328)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and 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)

Other student support services offered by UNT include

- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Pride Alliance (https://edo.unt.edu/pridealliance)
- UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)
- MathLab (https://math.unt.edu/mathlab)

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. [Insert specific sanction or academic penalty for specific academic integrity violation.]

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking 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. If you are an ODA approved student then you must take the exam at the ODA Test Center. 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 (https://disability.unt.edu/).

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 the UNT Learning Management System (LMS) for contingency plans for covering course materials.