

MATH 2700.501 – Linear Algebra and Vector Geometry Fall 2025

This syllabus is subject to change. Any changes to this syllabus will be announced both during regular class time and as an announcement on Canvas.

Instructor Information

Name: Julie Thompson

Email: julie.thompson2@unt.edu

Office Location: FRLD 366

Office Hours: MW 1:00 PM – 3:15 PM or by appt.

Location and Meeting Times

Room: FRLD 400

Meeting Times: MW 3:30-4:50 PM

Communication Expectations

If you have a general question about the course, please send me a **Canvas message** (preferred) or an email with **“MATH 2700.501” in the subject line**. *To protect your privacy, I will only reply to emails sent from your UNT account.*

I will check my Canvas messages and email every day (except weekends and holidays), and you can expect a response within one day. If you message me on Friday or over the weekend, expect a response by the following Monday!

Course Description

3 hours. The study of linear equations, matrix algebra, determinants, vector spaces, eigenvalues and eigenvectors, and orthogonality.

Course Structure

This course will be a lecture-style, face-to-face course meeting two (2) days per week for the Fall 2025 semester. Knowledge of topics and concepts from the class will then be demonstrated through homework (via the textbook) and in-class examinations. Your participation during class time (e.g., by asking/answering questions) will help me gauge how the class is doing with understanding certain topics while additionally making class meetings more engaging. Students who attend class regularly tend to perform better on homework and exams.

Course Prerequisites Prerequisite(s): **Math 1720**

Textbook

Linear Algebra and Its Applications by David Lay, Stephen Lay, Judi MacDonald **6th edition**

It is your responsibility to make sure that the problems you submit for homework come from the correct version of the textbook. If you submit a solution to a problem that was not assigned, you will not receive full credit for that problem.

Grades & Course Evaluation

Individual homework grades will be distributed via Canvas. Exam grades and your overall course grade will be distributed via Canvas. Note that a grade of C or better is required for this course to serve as prerequisite for any math course. The lowest one (1) homework grade will be dropped, and the lowest one (1) exam grade will be dropped from your total grade.

Grade Distribution

- Homework: 25%
- three (3) midterm exams and one (1) final exam (with the lowest score being dropped): 75%

Final Grade Assignment

- A: $[90, \infty)$
- B: $[80, 90)$
- C: $[70, 80)$
- D: $[60, 70)$
- F: $[0, 60)$

Tentative Course 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.

Week	Date	Topic
Week 1	08/18/25	Welcome and Syllabus 1.1: Systems of Linear Equations
	08/20/25	1.1: Systems of Linear Equations 1.2: Row Reduction and Echelon Forms
Week 2	08/25/25	1.3: Vector Equations 1.4: Matrix Equations
	08/27/25	1.4: Matrix Equations 1.5: Solution Sets of Linear Systems
Week 3	09/01/25	Labor Day – No Class!
	09/03/25	1.6: Applications of Linear Systems 1.7: Linear Independence
Week 4	09/08/25	1.7: Linear Independence 1.8 – 1.9: Linear Transformations
	09/10/25	1.8 – 1.9: Linear Transformations
Week 5	09/15/25	Exam Review
	09/17/25	Exam 1 (<i>tentatively 1.1-1.9</i>)
Week 6	09/22/25	1.10: Linear Models 2.1: Matrix Operations
	09/24/25	2.2: The Inverse of a Matrix

Week 7	09/29/25	2.3: Invertible Matrices
	10/01/25	3.1: Determinants
Week 8	10/06/25	3.2: More on Determinants 3.3: Cramer's Rule
	10/08/25	4.1: Vector Spaces and Subspaces 4.2: Null Spaces
Week 9	10/13/25	4.3: Linear Independent Sets; Bases
	10/15/25	4.4: Coordinate Systems
Week 10	10/20/25	<i>Exam Review</i>
	10/22/25	Exam 2 (<i>tentatively</i> 1.10-4.4)
Week 11	10/27/25	4.5: Dimension
	10/29/25	5.1: Eigenvectors and Eigenvalues
Week 12	11/03/25	5.2: The Characteristic Equation
	11/05/25	5.3: Diagonalization
Week 13	11/10/25	5.5: Complex Eigenvalues
	11/12/25	5.5: Complex Eigenvalues 5.6 Dynamical Systems
Week 14	11/17/25	6.1: Inner Product, Length, and Orthogonality 6.2: Orthogonal Sets
	11/19/25	6.3: Orthogonal Projections
Thanksgiving	11/24/25	Thanksgiving Break – No Classes!
	11/26/25	
Week 15	12/01/25	Exam 3 (<i>tentatively</i> 4.5-6.3)
	12/03/25	Review for the Final Exam
Week 16: Final Exams!	***	Comprehensive Final Exam

***** The final exam schedule for UNT Frisco campus will be published soon at the following link: <https://registrar.unt.edu/exams/final-exam-schedule/fall.html>**

Summary of Key Dates – Fall 2025:

- **Regular Registration Ends**: August 14
- **Late Registration**: August 15 - August 22
- **Last Day to Withdraw from Entire Term on myUNT**: August 17
- **Classes Begin**: August 18
- **Midpoint of the Semester**: October 10
- **Last Day to Drop a Course with a W**: November 7
- **First Day to Request a Grade of Incomplete**: November 8
- **Pre-Finals Days**: December 3-4
- **Reading Day**: December 5
- **Final Exam Week**: December 6 - December 11
- **Semester Ends**: December 12

Technical Requirements & Skills

Minimum Technology Requirements

- Computer Access
- Calculator (see Calculator section of the syllabus for details)

Computer Skills & Digital Literacy

Students are expected to be proficient at:

- Using Canvas
- Using email with attachments
- Using iClicker during class

Course Policies

Attendance Policy

Attendance will be taken during class. It is your responsibility to email me, with documentation, within a week, if your absence was university excused. If you miss a lecture, it is your responsibility to learn the missed material. Lectures will **not** be repeated during office hours. You should attend every class unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the [Student Attendance and Authorized Absences Policy \(PDF\)](https://policy.unt.edu/policy/06-039) (<https://policy.unt.edu/policy/06-039>). If you cannot attend a class due to an emergency, please let me know as soon as you can.

Recordings

This is a face-to-face class. That means that you are expected to be physically present in class for each class period this semester. I will **NOT** be recording my lectures via Zoom and posting them to Canvas.

Examination Policy

There will be 3 midterm exams and a comprehensive final exam. Your lowest exam score will drop at the end of the semester. If you are happy with your scores on the 3 midterms, then you may choose to omit the final exam.

No hats, caps, hoodies, or headphones may be worn during exams. Do not share any materials (pencils, calculators, etc.) during an exam. Turn off and put away all electronics during exams.

If you think that your work has been graded incorrectly, write a legible explanation of what you want re-graded and why on a separate piece of paper and turn this in to me with your exam within one week of receiving the exam back.

Make-up Policy:

Make-up exams will not be given for any reason after the fact. If you miss a midterm exam (for any reason), you will receive a 0 for that exam and it will be your dropped test score. You can take a test early if you need to; I need at least a week's notice in this situation.

Calculators:

Scientific and basic graphing calculators (like a TI-83) will be permitted for midterms and the final. TI-NSpires, TI 89's, TI 92's or any other utility with alphanumeric/CAS capabilities ARE **NOT** permitted during exams.

Academic Dishonesty:

Cheating 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. If a 0 was received on an exam due to academic dishonesty, that zero **will not** be dropped from your exam average at the end of the semester.

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

Homework will be assigned weekly on Canvas. **You must check Canvas for all homework due dates.**

Homework assignments are to be submitted on Canvas by 3:30 PM on the due date. **Your submission must be a single scan in pdf format.** Pictures of your homework will **NOT** be accepted. You should use either a scanner app (such as CamScanner) or use the scan function on the printers on campus (this is easy to do at either Denton or Frisco campus). Additionally, your work must be neatly written, easy to follow, and the problems must be in textbook order.

Failure to meet the above requirements will result in a 10-point deduction to your grade for that assignment.

One (1) lowest homework score will be dropped at the end of the semester. Therefore, in principle, you could get a 100% homework score and not turn in an assignment during the semester. I have this policy in case you get sick, a family emergency arises, etc., during the semester. There is **no** late homework accepted.

Participation

In this class, participation means attending class, asking and/or answering questions during class, taking good notes, sharing work at the board, being attentive during class, not being on cellphone, etc.

Late Work

Late work will not be accepted. The best way to ensure you pass this course is to work consistently throughout the semester. In mathematics courses, topics are always built upon the other, making it very difficult to catch up later if you fall behind. **I will not entertain any pleas for extra credit or offers to do additional work at the end of the semester.**

GenAI Use

Prohibited Use: *In this course, I want you to engage deeply with the materials and develop your own critical thinking and writing skills. For this reason, the use of Generative AI (GenAI) tools like ChatGPT is not permitted. While these tools can be helpful in some contexts, they do not align with our goal of fostering the development of your independent thinking. Using GenAI to complete any part of an assignment, exam, or coursework will be considered a violation of academic integrity, as it prevents the development of your own skills, and will be addressed according to the [Student Academic Integrity policy](https://policy.unt.edu/policy/06-003) (<https://policy.unt.edu/policy/06-003>).*

Recommended Steps to Succeed

- Learning math requires a great deal of time and honest effort along with regular and consistent work.
- Prior to the exams, complete the exam reviews.
- Form a study group with your classmates.
- Make use of the tutoring options available to you: the Math Lab, the Learning Center and your instructor's tutoring hours.
- Work on the assignments consistently well ahead of the due date. Waiting until the last minute is not a wise idea.
- Get help in the Math Lab See <https://learningcenter.unt.edu/math-lab> The learning center offers several tutoring options: Drop-In Tutoring, One-on-One Tutoring, Group Tutoring and Online Tutoring. See <http://learningcenter.unt.edu/tutoring>.

Getting Help

Technical Assistance

Here at UNT, we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk (<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

Student Support Services

- [Registrar](https://registrar.unt.edu/registration) (<https://registrar.unt.edu/registration>)
- [Financial Aid](https://financialaid.unt.edu/) (<https://financialaid.unt.edu/>)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (<https://studentaffairs.unt.edu/student-legal-services>)
- [Career Center](https://studentaffairs.unt.edu/career-center) (<https://studentaffairs.unt.edu/career-center>)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (<https://edo.unt.edu/multicultural-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [Student Affairs Care Team](https://studentaffairs.unt.edu/care) (<https://studentaffairs.unt.edu/care>)
- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center) (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (<https://edo.unt.edu/pridealliance>)

Academic Support Services

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

Drop/Withdrawal Policy

If the student is unable to complete this course, it is their responsibility to formally withdraw from the course. You can find more details about dropping the course [at this link](#).

If the student does not properly withdraw from the course but stops attending, the student will receive a performance grade, usually an F.

If you are considering dropping, it is strongly recommended that you discuss the matter with me as soon as possible.

Changes to the University's policy may affect this. Please contact the Registrar with further questions.

Incomplete

Beginning 11/08, a student that qualifies may request a grade of "I", incomplete. An "I" is a non-punitive grade given only if ALL three of the following criteria are satisfied. They are:

- The student is passing the course
- The student has a justifiable (and verifiable) reason why the work cannot be completed as scheduled; and

The student arranges with the instructor to complete the work within one academic year.

Changes to the University's policy may affect this. Please contact the Registrar with further questions.

Welcome to UNT!

As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

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 these [Engagement Guidelines](https://clear.unt.edu/online-communication-tips) (<https://clear.unt.edu/online-communication-tips>) for more information.

Online Course System

The University is committed to providing a reliable online course system to all users. However, 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](https://www.unt.edu/helpdesk) (<https://www.unt.edu/helpdesk>)

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Laptop Checkout: 8am-7pm

UNT Policies

Academic Integrity Policy

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.

ADA Policy

The University of North Texas makes reasonable accommodations for students with disabilities. To request accommodations, you must first register with the Office of Disability Access (ODA) by completing an application for services and providing documentation to verify your eligibility each semester. Once your eligibility is confirmed, you may request your letter of accommodation. ODA will then email your faculty a letter of reasonable accommodation, initiating a private discussion about your specific needs in the course. You can request accommodations at any time, but it's important to provide ODA notice to your faculty as early as possible in the semester to avoid delays in implementation. Keep in mind that you must obtain a new letter of accommodation for each semester and meet with each faculty member before accommodations can be implemented in each class. You are strongly encouraged to meet with faculty regarding your accommodations during office hours or by appointment. Faculty have the authority to ask you to discuss your letter during their designated office hours to protect your privacy. For more information and to access resources that can support your needs, refer to the [Office of Disability Access](https://studentaffairs.unt.edu/office-disability-access) website (<https://studentaffairs.unt.edu/office-disability-access>).

Academic Support & Student Services

Student Support Services

Mental Health

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) (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [UNT Care Team](https://studentaffairs.unt.edu/care) (<https://studentaffairs.unt.edu/care>)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry) (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling) (<https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>)

Additional Student Support Services

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

Academic Support Services

- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (<https://clear.unt.edu/canvas/student-resources>)
- [Academic Success Center](https://success.unt.edu/asc) (<https://success.unt.edu/asc>)
- [UNT Libraries](https://library.unt.edu) (<https://library.unt.edu>)
- [Writing Center](https://writingcenter.unt.edu) (<https://writingcenter.unt.edu>)
- [Math Lab](https://learningcenter.unt.edu/math-lab) (<https://learningcenter.unt.edu/math-lab>)

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 Canvas for contingency plans for covering course materials.