

2025 Spring MATH 2730.007/Multivariable Calculus

MoWeFr 9:00AM - 9:50AM; BLB 140

Instructor Contact

Name: Ethan Jensen

Office Location: GAB 476

Office Hours: W 10-12pm

Communication: Email is preferred. I only respond to UNT student email addresses. You can also message me on canvas. Your communication with me and your classmates is expected to be in line with [UNT's General Online Communication Guidelines](#).

Communication Expectations: I typically respond within one (1) business day, during business hours.

Course Description

5 hours. A course covering calculus with multiple variables: vector arithmetic, vector-valued functions, arc length and curvature. We will cover partial derivatives and the chain rule in multiple variables, gradients, lagrange multipliers, and optimization. We will also cover multiple integrals, and then finish with studying vector fields and vector calculus and Green's Theorem.

Required Text

The textbook is James Stewart Calculus Early transcendentals 7th Edition (2016). You can purchase a physical copy online, or you can find other cheaper online options. If you still have access to the 8th edition textbook which comes with webassign, that will also work. I will not be assigning problems from the textbook. In this course, the textbook is meant to be used as a reference text - to help you if there are challenging concepts you want more practice working on.

Grading

Written Assignments – 25%

In-Class Activities – 5%

Midterm Exams – 50%

Final Exam – 20%

- A: 90-100% (Outstanding, excellent work. The student performs well above the minimum criteria.)
- B: 80-89% (Good, impressive work. The student performs above the minimum criteria.)
- C: 70-79% (Solid, college-level work. The student meets the criteria of the assignment.)
- D: 60-69% (Below average work. The student fails to meet the minimum criteria.)
- F: 59 and below (Sub-par work. The student fails to complete the assignment.)

Your exam grades and written assignment grades will be posted in Canvas

Late work will not be accepted in this course regardless of the reason.

Course Prerequisites or Other Restrictions

- Officially, the prerequisite is a grade of C or higher in MATH 1720.
- A willingness to put in several hours of work each week to absorb the material in each module. In math courses, especially this one, the content will build upon itself making it very difficult to catch up if you fall behind

Course Objectives

Upon successful completion of this course, learners will be able to:

1. Perform basic vector arithmetic including taking dot products and cross products of vectors, and project vectors to compute orthogonal and parallel components
2. Perform matrix multiplication and take determinants
3. Create and use equations of lines and planes to solve problems
4. Graph lines, planes, spheres, cylinders, and other surfaces in 3D space
5. Do calculus with vector-valued-functions
6. Compute arc length and curvature
7. Compute partial derivatives, gradient, directional derivatives, laplacian
8. Compute local maximums and minimums of multivariable functions and classify them
9. Compute multiple integrals: volumes, averages, center of mass etc.
10. Compute divergence and curl, apply Green's theorem

Written Assignments

You will have several written assignments. These assignments require you to show, in your own handwriting, the mathematical process for the problems. These written assignments must follow the following conditions:

- Must be completed in your own legible writing
- Written Assignments should be project-level quality: well organized, written neatly, and mathematically correct
- No credit for correct answers without correct work
- Box final answers

No late homework will be accepted for any reason whatsoever. At the end of the term, your two (2) lowest written homework scores will be dropped. Your written assignments will be posted online and must be turned in online.

In-Class Activities

Before each exam, I will assign exam review packets that you will work on with other students in groups.

Exams

You will have three exams and a comprehensive final exam. Actual exams dates and content will be announced in class, usually at least two weeks before the exam date. The tentative exam dates are

Feb 7, Mar 7, Apr 23

No make-up exams will be given for any reason. An exam may be taken prior to the scheduled date. You must request for this accommodation via email at least one week prior to the day you wish to take the early exam. If you miss an exam contact me as soon as possible.

Attendance

Attendance is important. Almost all students who have failed have missed several lectures. I will be available in my office hours for specific questions or problems, but I will not repeat whole lectures.

Changes to Syllabus

I reserve the right to amend, append, or otherwise make changes to this syllabus, should the need arise. Any changes will be posted as an Announcement in Canvas.

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](http://www.unt.edu/helpdesk/index.htm) (<http://www.unt.edu/helpdesk/index.htm>)

Email: helpdesk@unt.edu

Phone: 940-565-2324

In Person: Sage Hall, Room 130

Canvas Technical Requirements: [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements)
(<https://clear.unt.edu/supported-technologies/canvas/requirements>)

Additional Canvas Support: [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328)
(<https://community.canvaslms.com/docs/DOC-10554-4212710328>)

Cengage WebAssign Technical Support

WebAssign offers student technical support

Phone: 800.354.9707

Website: [WebAssign Student Support](#)

Academic Support Services

- [UNT Math Lab](https://learningcenter.unt.edu/math-lab) (<https://learningcenter.unt.edu/math-lab>)
- [UNT Learning Center](https://learningcenter.unt.edu) (<https://learningcenter.unt.edu>)
- [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/)

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)
(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)

Other student support services offered by UNT include:

- [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)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (https://edo.unt.edu/pridealliance)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/food-pantry) (https://deanofstudents.unt.edu/resources/food-pantry)

UNT Policies

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.

Cheating on tests, quizzes or final exams is a serious breach of academic standards and will be punished severely and generally result in a student failing the course. All work done on exams and quizzes must represent only the student's own work, unless otherwise stated in the directions. 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. See [Academic Integrity](#) for details on academic integrity at UNT.

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](https://deanofstudents.unt.edu/conduct) (<https://deanofstudents.unt.edu/conduct>) to learn more.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (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 see the ODA website at disability.unt.edu.

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

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 [Electronic Code of Federal Regulations website](http://www.ecfr.gov/) (<http://www.ecfr.gov/>). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) 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 International Student and Scholar Services 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 his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

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](https://policy.unt.edu/policy/07-002) (<https://policy.unt.edu/policy/07-002>).