2026 5Wk2 MATH 1710. 415: Calculus 1 June 22 – July 24

Welcome

Welcome to Calculus I. This course is designed to develop the foundational concepts of differential and integral calculus while strengthening analytical thinking and problem-solving skills. Success in Calculus I comes from consistent practice, active engagement with the material, and seeking help early when concepts become challenging. My goal is to support you in building the mathematical understanding and confidence needed for success in calculus and future STEM coursework.

Instructor Information

Name: Dr. Shuang Liu

Virtual Office Hours (by appointment)

I'm available to support your progress in this course. Use the scheduling link in Canvas to book a virtual meeting for questions, course help, or review.

How to Contact Me

Please reach out whenever you have questions or concerns.

- **Canvas Inbox (Preferred)**: Fastest response.
- **UNT Email**: Include "MATH 1710.415" in the subject line and use your official UNT email account.

I usually respond within **one business day**. If you don't hear back, please send a follow-up message.

Please remember to keep all communication respectful and professional, following UNT's General Online Communication Tips.

Course Overview

This course develops the foundational concepts and techniques of differential and integral calculus while strengthening analytical reasoning and mathematical problem-solving skills. Topics include limits, continuity, derivatives, applications of differentiation, integrals, and the Fundamental Theorem of Calculus.

Because Calculus I serves as a foundation for future STEM coursework, emphasis is placed on algebraic fluency, symbolic reasoning, and connecting graphical, numerical, and analytical representations of functions. The course is organized into modules designed to support your development of calculus understanding and readiness for continued study in mathematics and related fields.

Catalog Course Description

4 hours. Limits and continuity, derivatives, and integrals; differentiation and integration of polynomial, rational, trigonometric, and algebraic functions; applications, including slope, velocity, extrema, area, volume, and work.

Course Prerequisites

The prerequisite for Calculus I is a grade of or higher in MATH 1650; or grade of C or higher in both MATH 1600 and MATH 1610.

Success in this course requires consistent daily practice and active engagement with the material.

Digital Literacy Skills

- Navigate Canvas and WebAssign
- Complete and submit assignments online
- Scan and upload handwritten work
- Download and install required course software, including Respondus LockDown Browser
- Access, download, and print required course materials.

Course Structure

This course takes place 100% online. Information on how to be successful in a remote learning environment can be found at UNT Online (https://online.unt.edu/learn). Except for optional virtual sessions, your interactions with me and your classmates will take place on Canvas.

This course begins with the first content module in Canvas open. I will open subsequent modules as we progress through the course. This course has four (4) content modules. Module, chapter, and unit are used interchangeably.

In each content module, you will find student lecture notes templates that correspond to instructional videos. The lesson videos present instruction and solutions to examples. Print the student notes and fill in the blanks as you watch the videos. This is how you "attend class."

Course Objectives

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

- Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.
- Create graphs of functions considering limits, continuity, and differentiability at a point.
- Determine whether a function is continuous and/or differentiable at a point using limits.
- Use differentiation rules to differentiate functions.
- Identify appropriate calculus concepts and techniques to provide mathematical modules of real-world situations and determine solutions to applied problems.
- Evaluate definite integrals using the Fundamental Theorem of Calculus.
- Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus.
- Determine the area between curves using integration techniques.
- Determine the volume generated by rotating a curve about an axis; and
- Compute the average value of a function by integration.

Required Course Materials

Cengage WebAssign (Required)

Purchase of Cengage WebAssign access is required for the full course term. WebAssign is used for homework and required course materials.

Students using trial access must purchase full access before the 7-day trial expires.

WebAssign includes:

- Homework assignments for each content module
- The e-text of *Precalculus: Mathematics for Calculus*, 8th Edition (2025) by James Stewart, Lothar Redlin, and Saleem Watson
- Additional learning resources

Registration & Purchase Instructions

- Register only **once** through the Cengage link on Canvas.
- Use your official UNT email address and official UNT name when registering.
- Only work completed in your first valid WebAssign account may receive credit.
- Work completed in additional accounts or accounts created with non-UNT email address may not receive credit.
- Register immediately. See the **Start Here** module in Canvas for full instructions.
- WebAssign may offer a one-time 7-day trial access to students who have not previously used the trial.
- Students using trial access must purchase full access before the 7-day trial access expires to avoid loss of access or credit.

Calculator

TI 84 or equivalent.

Note-taking Materials

- Guided notes are available in Canvas.
- Keep paper and pencil available for lesson notes, practice, and exam preparation.

Technology Requirements

To complete this course, students need:

- A computer or tablet compatible with Canvas
- Reliable internet access
- Webcam and microphone for proctored test
- Respondus Lockdown Browser (linked in Canvas)
- A printer is strongly recommended

Note: Smartphones are **not** sufficient for coursework or exams.

Check Canvas Technical Requirements to confirm device compatibility.

Course Evaluation & Grading

Evaluation

Your grade is based on the following components:

- Homework (WebAssign) – 15%
- Calculus Readiness Diagnostic Quiz – 5%
- Quizzes – 5%
- Written Assignments (Worksheets) – 5%
- Midterm Exams (average of all) – 50%
- Final Exam – 20%
- Engagement Tasks (Discussions, Orientation assignments, etc.) – 2%

Grades are posted in the Canvas throughout the course.

Grading Scale

- A: 90 – 100%
- B: 80 – 89%
- C: 70 – 79%
- D: 60 – 69%
- F: Below 60%

Grading Policy

Grades are based on individual performance on course assignments and exams. This course is not graded on a curve.

Students are encouraged to collaborate appropriately while completing their own graded work.

Course Components

Homework: Learn through Practice

Homework helps you practice new skills, strengthen algebraic reasoning, and prepare for quizzes and exams. Most weeks include several homework assignments beginning during the first week of class. Success in Precalculus usually comes from steady practice and consistent effort over time.

The course is organized into four modules, each containing multiple sections. Homework assignments, including WebAssign activities, are accessed through Canvas.

Maintain a dedicated notebook for your math work. Writing out steps, formulas, and reasoning helps reinforce understanding and creates a valuable study resource for exam preparation.

- Most WebAssign questions allow up to 5 attempts. True/false and multiple-choice questions typically allow only 1 attempt.
- Homework assignments are due by 11:59 PM on the posted due date.
- Work ahead when possible, especially during busy weeks.
- A 5% bonus is awarded for homework submitted more than 48 hours before the deadline.

- Late homework is not accepted; however, your three lowest homework scores will be dropped to help account for occasional difficulties.
- Homework may also include additional graded activities posted in Canvas.

Calculus Readiness/Prerequisite Diagnostic

During the first two days of the semester, you will need to complete a somewhat lengthy Precalculus review assignment. It is the *Calculus Readiness Diagnostic* assignment in WebAssign. This assignment goes over the main topics from Precalculus to make sure that you are prepared for this class. You have 100 attempts on each question, so you have ample opportunity (though not ample time) to review, revisit, refresh, and if needed, relearn key prerequisite material. Because this assignment is all prerequisite content, you should complete this the first day of class. **This assignment is 5% of your course grade**.

Quizzes

You have weekly quizzes in Canvas every Thursday. The quizzes require Respondus Lockdown Monitor to ensure academic integrity. The quizzes are available from Wednesday through Thursday, 11:59 PM of the week. You should complete the homework before you attempt the quiz. The quizzes are timed and must be completed in one setting.

Worksheets

You have weekly worksheets to submit in Canvas. They are due on Thursdays. The worksheets provide you with the important opportunity to learn how to construct and present mathematical work. Worksheets must be completed in your own handwriting on paper, no credit for digital presentations. The worksheets are released on Mondays.

Engagement Tasks

Engagement tasks are orientation assignments and discussion posts. The discussion assignments are intended to replicate classroom conversation and to connect you with your classmates.

Exams

You have five (5) exams: Four (4) midterm exams and a final exam. Each exam must be submitted by 11:59 PM of the exam day.
Exam 1 – Friday June 26, 12:01 AM – 11:59 PM. Content: 1.4 – 1.8, 2.1, 2.2
Exam 2 – Monday July 6, 12:01 AM – 11:59 PM. Content: 2.3 – 2.9
Exam 3 – Monday July 13, 12:01 AM – 11:59 PM. Content: 3.1 – 3.8, not 3.6
Exam 4 – Monday July 20, 12:01 AM – 11:59 PM. Content: 3.9, 4.1 – 4.5, 5.1 – 5.3
Final Exam – Friday, July 24, 12:01 AM – 11:59 PM. See UNT Final Exam Schedule, comprehensive.

Changes to Syllabus

Changes made to the syllabus will be posted as an Announcement on Canvas.

Course Schedule

Course assignments are due by 11:59 PM on the posted due date. Plan ahead and avoid waiting until the last minute to complete coursework. Before beginning homework assignments, complete the learning activities for each section:

- Print or open guided notes
- Watch lesson videos while taking notes
- Review your notes afterward
- Read assigned textbook sections when listed

Completing the learning coursework before starting assignments will help you better understand the material and improve your performance on homework, quizzes, and exams.

Be sure to incorporate Juneteenth and Independence Day holidays

Week 1

Date	Assignments Due
Mon 6/22	Getting Familiar with WA 1.4 Tangent and Velocity Problems Syllabus Quiz
Tue 6/23	1.5 The Limit of a Function 1.6 Calculating Limits Using Limit Laws Calculus 1 Readiness Diagnostic, 5% of Course Grade
Wed 6/24	1.7 The Precise Definition of the Limit 1.8 Continuity Module 1 Discussion
Thu 6/25	2.1 Derivatives and the Rate of Change 2.2 The Derivative as a Function Worksheet 1: Submit PDF in Canvas Quiz 1
Fri 6/26	EXAM 1

Week 2

Date	Assignments Due
Mon 6/29	2.3 Differentiation Formulas 2.4 Derivatives of Trigonometric Functions
Tues 6/30	2.5 The Chain Rule

	2.6 Implicit Differentiation
Wed 7/1	2.7 Rates of Change in the Natural and Social Sciences 2.8 Related Rates Module 2 Discussion
Thu 7/2	2.9 Linear Approximation and Differentials Worksheet 2: Submit PDF in Canvas Quiz 2
Fri 7/3	**Independence Day – University Closed**

Week 3

Date	Assignments Due
Mon 7/6	EXAM 2
Tues 7/7	3.1 Maximum and Minimum Values 3.2 The Mean Value Theorem
Wed 7/8	3.3 Derivatives and the Shape of a Graph 3.4 Limits at Infinity: Horizontal Asymptotes Module 3 Discussion
Thu 7/9	3.5 Summary of Curve Sketching 3.7 Optimization Worksheet 3: Submit PDF in Canvas Quiz 3
Fri 7/10	3.8 Newton's Method

Week 4

Date	Assignments Due
Mon 7/13	EXAM 3
Tues 7/14	3.9 Antiderivatives 4.1 The Area and Distance Problems
Wed 7/15	4.2 The Definite Integral 4.3 The Fundamental Theorem of Calculus Module 4 Discussion
Thu 7/16	4.4 Indefinite Integrals and the Net Change Theorem 4.5 The Substitution Rule Worksheet 4: Submit PDF in Canvas Quiz 4
Fri 7/17	5.1 Areas between Curves 5.2 Volumes

Week 5

Date	Assignments Due
Mon 7/20	EXAM 4
Tue 7/21	5.3 Volumes by Cylindrical Shells 5.5 Average Value of a Function
Wed 7/22	Calculus 1 Review Worksheet 5: Submit PDF in Canvas Quiz 5
Thu 7/23	
Fri 7/24	FINAL EXAM

Math 1710 Course Policies

Academic Integrity

Academic honesty is expected in this course. Cheating, plagiarism, unauthorized use of AI, or other academic misconduct may result in penalties consistent with university policy.

Possible consequences include a zero on that assignment, an F in the course for serious violations, and referral to the Office of Academic Integrity in accordance with UNT Policy 06.003.

Success in this course requires honest effort, personal responsibility, and appropriate use of course resources.

AI Policy

AI tools may be used only when explicitly authorized in the assignment instructions.

Attendance/Participation

Because this is an online course, attendance means regular participation in course activities.

This includes:

- Watching lesson videos
- Completing guided notes
- Submitting assignments on time
- Staying current with course deadlines

Course materials provide the primary instruction for this class. Office hours and messages are best used for specific questions after reviewing the lesson materials.

Students are expected to plan ahead and work proactively when possible. For exam scheduling conflicts, request an early exam through Canvas Inbox at least two business days in advance.

See UNT's Student Attendance and Authorized Absences Policy for excused absences.

Examination Policy

All exams are completed in Canvas using Respondus LockDown Browser.

- Exams must be submitted by 11:59 PM on the scheduled date.
- Exams not completed by the deadline receive a score of zero unless covered by an approved university-excused absence.
- Documentation for approved absences must be submitted within two business days of missed exam date.
- When approved, the final exam score may replace a missed module exam grade.
- Students needing an **early exam** should contact me through Canvas at least two business days before the requested early exam date. Approval is based on course scheduling and circumstances.

Exam Protocol for Testing with Respondus

To support a fair testing environment:

- Complete the How to Take an Exam with Respondus module before your first exam.
- Test in a private space with clear desk or workspace.
- Complete the exam independently.
- Module exams are 60 minutes unless otherwise noted.
- Once an exam begins, the timer continues. Please confirm your technology is ready before starting.
- Students should check technology before starting as extra time or retakes are not provided for avoidable technical issues.
- Written work must be completed on paper when required and shown as instructed for credit.
- Coursework submissions are accepted only through the designated course platform unless otherwise directed.
- Exam grades are typically posted within one week.

Students may ask questions about grading for clarification. Final score determinations remain with the instructor.

Late Work Policy

This course moves quickly, so deadlines are important.

- Assignments are due by the posted deadline.
- Exams cannot be submitted late.
- Your three lowest WebAssign homework scores will be dropped at the end of the term.

Late work is not accepted. However, WebAssign homework submitted more than 48 hours before the due date earns a 5% early submission bonus.

Resources for Success

Many students improve through steady practice and early use of support resources. Below are key resources to help you stay on track and strengthen your understanding:

- **Instructor Support**: Message me through Canvas Inbox. I respond to most student messages in one business day.
- **Study Groups**: Use the Navigate Study Buddy tool to connect with classmates and study together. Collaborative learning strengthens understanding.
- UNT Math Lab: Free math tutoring in a welcoming environment.
- The Learning Center: Academic coaching, workshops, and tutoring to support your success across all courses.

Student Support Services & Assistance

Academic Support and Student Services

UNT strives to offer you a high-quality education and a supportive environment, so you learn and grow. As a faculty member, I am committed to helping you be successful as a student. To learn more about campus resources and information on how you can be successful at UNT, go to Succeed at UNT (unt.edu/success) and explore the many links at Wellness at UNT (unt.edu/wellness). To get all your enrollment and student financial-related questions answered, go to Integrated Student Services (scrappysays.unt.edu).

Technical Assistance for 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 and other UNT technology issues.

Visit the UIT Help Desk website for their current support hours. Website link, email, phone number, and office location are as follows:

IT Help Desk: IT Student Help Desk (https://its.unt.edu/support/)

Email: helpdesk@unt.edu

Phone: 940-565-2324

In Person: Sage Hall, Room 330

Canvas Technical Requirements: Canvas Technical Requirements (https://digitalstrategy.unt.edu/clear)

Additional Canvas Support: Canvas Technical Help (https://communitycanvalms.com/docs/DOC-10554-4212710328)

Cengage WebAssign Student Support

Website: WebAssign Student Support

Welcome to UNT!

As members of the UNT community, we have all made a commitment to being 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 Policies

Academic Integrity Standards and Consequences 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.

Every student in this course can improve through consistent effort and academic honesty. Academic Integrity Policy violations will not help you succeed. Read and follow this important set of guidelines for your academic success.

ADA Accommodation Statement

UNT makes reasonable academic accommodations for students with disabilities. Students seeking accommodations must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide the 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 accommodations should be provided as early as possible in the semester to avoid delays 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 Office of Disability Access website.

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 student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward email to Eagle Connect (https://it.unt.edu/eagleconnect).

Emergency Notification and Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency. In the event of university closure, please refer to the UNT Learning Management System, Canvas, for contingency plans for covering course materials.

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 the last weeks of the term 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 (http://spot.unt.edu/) or email spot@unt.edu.

Important Notice for F-1 Students taking Distance Education Courses

Federal regulations state that students may apply only 3 fully-online semester credit hours (SCH) to the hours required for full-time status for F-1 Visa (PDF) holders. Full-time status for F-1 Visa students is 12 hours for undergraduates and 9 hours for graduate students.

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 Student Identity Verification Policy, (https://policy.unt.edu/policy/07-002).

Summary of Key Dates – 2026 5Wk1

June 22: Classes begin.

June 24: Last day to Add a Class or Swap Sections.

June 25: Census – Official Enrollment Determined. Last day to drop a course section to no longer appear on the official transcript. (*Dropping courses may impact financial aid and degree completion. See advisors.*)

June 26: Beginning this this, students can drop a course with a grade of W. For information on how to drop a class, see Registration Guide, Dropping. The course appears on the transcript with a Grade of W and tuition and fees remain. (*Dropping courses may impact financial aid and degree completion. See advisors.*)

July 3: The last day to drop a course or all courses with a grade of W.

July 17: Beginning this date, a student may request a grade of "I," incomplete, a non-punitive grade given only if a student (1) ***is passing***, (2) has justifiable reason the work cannot be completed on schedule; and (3) arranges with the instructor to complete the work in no more than one academic year.

July 24: Final Examination, Last Day of Session.