# FALL 2025 MATH 1710.620 Calculus I (TAMS)

## Instructor Information

**Name:** Allen Mann

**Pronouns:** he/him/his

**Office Location:** GAB 432

**Student Support Hours:** By appointment and

* Monday @ 1:00-2:50 pm
* Thursday @ 9:30-10:50 am
* Friday @ 1:00-2:50 pm

**Email:** allen.mann@unt.edu

Hello! I am a Principal Lecturer in the Department of Mathematics. I have taught at UNT since 2015. Please call me Dr. Mann. I received my Ph.D. and M.A. in Mathematics from the University of Colorado at Boulder, and a B.A. in Mathematics and French cum laude from Albertson College of Idaho. I have travelled around the world, and I have lived in both France and Finland.

## How to Communicate with Your Instructor

Please reach out to me if you have questions, need help, or want to let me know about something that affects your engagement with the class. There are three ways to contact me outside of class.

* **WebAssign:** To get help with a specific homework problem, click “Ask Your Teacher” in WebAssign (near the top of the page). Please include a detailed explanation of how you tried to solve the problem.
* **Canvas:** For general inquiries, send me a message using the [Canvas](https://techsupport.unt.edu/students) Inbox.
* **Email:** You may also send me an email with “MATH 1710.620” in the subject line from your [UNT email account](https://techsupport.unt.edu/students).

You may expect a response within two business days. If you do not hear from me within that timeframe, feel free to send a reminder.

## Course Description

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. **Prerequisites:** Placement.

This is a 15-week, face-to-face course that will cover mathematical induction and selected material from Chapter 1-5. There will be weekly quizzes plus three mid-term exams and a comprehensive final exam.

## Learning Objectives

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

* Prove theorems using mathematical induction
* Evaluate limits of functions and verify limits using the precise definition
* Determine whether a function is continuous
* Find derivatives and antiderivatives of elementary combinations of rational and trigonometric functions
* Use derivatives and antiderivatives to solve problems from the natural sciences
* Evaluate Riemann sums and definite integrals to find the area of planar regions
* Use the method of cross-sections and cylindrical shells to find the volume of solids
* Find the average value of a function

## Course Materials

This course has digital components. To fully participate in this class, students will need internet access to reference content on the [Canvas Learning Management System](https://clear.unt.edu/supported-technologies/canvas/requirements) (https://clear.unt.edu/supported-technologies/canvas/requirements).

**Textbook:** Stewart, James, Clegg, Daniel K., and Watson, Saleem. *Calculus*, 9th edition. Cengage, 2021. An electronic version of the textbook is included with WebAssign. You should activate your Cengage Unlimited code as soon as possible so that you can start working on the first homework assignment.

**Lecture Notes:** Fill-in-the-blank notes available on Canvas should be brought to each lecture.

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](https://online.unt.edu/learn) (https://online.unt.edu/learn).

## How to Succeed in this Course

Mathematics is a skill that requires practice to develop. It is also a language with its own rules and conventions. In order to master the course material, you must exert consistent effort throughout the semester:

* Read the relevant section of the textbook prior to each lecture.
* Start working on each homework assignment as soon as possible after the corresponding lecture.

### ADA Accommodation Statement

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the [Office of Disability Access](https://studentaffairs.unt.edu/office-disability-access/) (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the [Office of Disability Access](https://studentaffairs.unt.edu/office-disability-access) website (https://studentaffairs.unt.edu/office-disability-access). You may also contact ODA by phone at (940) 565-4323.

## Creating an Inclusive Learning Environment

I value the many perspectives students bring to our campus. Please work with me to create a classroom culture of open communication, mutual respect, and belonging. All discussions should be respectful and civil. Although disagreements and debates are encouraged, personal attacks are unacceptable. Together, we can ensure a safe and welcoming classroom for all. If you ever feel like this is not the case, please stop by my office and let me know. We are all learning together.

## Course Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Day** | **Date** | **Section** | **Topic** | **Homework** |
| Mon | 8/18/2025 |  | First day of class |  |
| Tue | 8/19/2025 |  | Mathematical Induction |  |
| Wed | 8/20/2025 |  | Mathematical Induction |  |
| Thu | 8/21/2025 |  |  | Mathematical Induction A |
| Fri | 8/22/2025 |  | Induction Problems with Inequalities |  |
|  |  |  |  | Mathematical Induction B |
| Mon | 8/25/2025 | 1.4 | The Tangent and Velocity Problems |  |
| Tue | 8/26/2025 | 1.5 | The Limit of a Function | Getting Familiar with WA |
| Wed | 8/27/2025 | 1.6 | Calculating Limits Using the Limit Laws |  |
| Thu | 8/28/2025 |  |  | HW 1.4 |
| Fri | 8/29/2025 | 1.6 | Calculating Limits Using the Limit Laws |  |
|  |  |  |  |  |
| Mon | 9/1/2025 |  | **Labor Day** | HW 1.5 |
| Tue | 9/2/2025 |  | **Quiz 1 (1.4-1.5)** |  |
| Wed | 9/3/2025 | 1.8 | Continuity |  |
| Thu | 9/4/2025 |  |  | HW 1.6 |
| Fri | 9/5/2025 | 1.8 | Continuity |  |
|  |  |  |  | HW 1.8 |
| Mon | 9/8/2025 | 1.7 | The Precise Definition of a Limit |  |
| Tue | 9/9/2025 |  | **Quiz 2 (1.6 & 1.8)** |  |
| Wed | 9/10/2025 | 1.7 | The Precise Definition of a Limit |  |
| Thu | 9/11/2025 |  |  |  |
| Fri | 9/12/2025 | 2.1 | Derivatives and Rates of Change | HW 1.7 |
|  |  |  |  |  |
| Mon | 9/15/2025 | 2.2 | The Derivative as a Function |  |
| Tue | 9/16/2025 |  | **Exam 1 (Induction & Section 1.4-1.8)** |  |
| Wed | 9/17/2025 | 2.3 | Differentiation Formulas |  |
| Thu | 9/18/2025 |  |  | HW 2.1 |
| Fri | 9/19/2025 | 2.3 | Differentiation Formulas |  |
|  |  |  |  | HW 2.2 |
| Mon | 9/22/2025 | 2.4 | Derivative of Trigonometric Functions |  |
| Tue | 9/23/2025 |  | **Quiz 3 (2.1-2.2)** |  |
| Wed | 9/24/2025 | 2.5 | The Chain Rule |  |
| Thu | 9/25/2025 |  |  | HW 2.3-2.4 |
| Fri | 9/26/2025 | 2.6 | Implicit Differentiation |  |
|  |  |  |  | HW 2.5 |
| Mon | 9/29/2025 | 2.7 | Rates of Change in the Natural and Social Sciences |  |
| Tue | 9/30/2025 |  | **Quiz 4 (2.3-2.5)** |  |
| Wed | 10/1/2025 | 2.8 | Related Rates |  |
| Thu | 10/2/2025 |  |  | HW 2.6-2.7 |
| Fri | 10/3/2025 | 2.8 | Related Rates |  |
|  |  |  |  | HW 2.8 |
| Mon | 10/6/2025 | 2.9 | Linear Approximations and Differentials |  |
| Tue | 10/7/2025 |  | **Quiz 5 (2.6-2.8)** |  |
| Wed | 10/8/2025 | 3.1 | Maximum and Minimum Values |  |
| Thu | 10/9/2025 |  |  | HW 2.9 |
| Fri | 10/10/2025 | 3.2 | The Mean Value Theorem |  |
|  |  |  |  | HW 3.1 |
| Mon | 10/13/2025 | 3.3 | How Derivatives Affect the Shape of a Graph |  |
| Tue | 10/14/2025 |  | **Exam 2 (Section 2.1-2.9, 3.1)** |  |
| Wed | 10/15/2025 | 3.4 | Limits at Infinity; Horizontal Asymptotes |  |
| Thu | 10/16/2025 |  |  | HW 3.2 |
| Fri | 10/17/2025 | 3.5 | Summary of Curve Sketching |  |
|  |  |  |  | HW 3.3 |
| Mon | 10/20/2025 | 3.7 | Optimization Problems |  |
| Tue | 10/21/2025 |  | **Quiz 6 (3.1-3.3)** |  |
| Wed | 10/22/2025 | 3.7 | Optimization Problems |  |
| Thu | 10/23/2025 |  |  | HW 3.4-3.5 |
| Fri | 10/24/2025 | 3.9 | Antiderivatives |  |
|  |  |  |  | HW 3.7 |
| Mon | 10/27/2025 | 3.9 | Antiderivatives |  |
| Tue | 10/28/2025 |  | **Quiz 7 (3.4-3.5, 3.7)** |  |
| Wed | 10/29/2025 | 4.1 | Areas and Distances |  |
| Thu | 10/30/2025 |  |  | HW 3.9 |
| Fri | 10/31/2025 | 4.2 | The Definite Integral |  |
|  |  |  |  | HW 4.1-4.2 |
| Mon | 11/3/2025 | 4.3 | The Fundamental Theorem of Calculus |  |
| Tue | 11/4/2025 |  | **Quiz 8 (3.9-4.2)** |  |
| Wed | 11/5/2025 | 4.4 | Indefinite Integrals and the Net Change Theorem |  |
| Thu | 11/6/2025 |  |  | HW 4.3 |
| Fri | 11/7/2025 | 4.5 | The Substitution Rule |  |
|  |  |  |  |  |
| Mon | 11/10/2025 | 4.5 | The Substitution Rule |  |
| Tue | 11/11/2025 |  | **Exam 3 (Section 3.2-3.5, 3.7, 3.9, & 4.1-4.2)** |  |
| Wed | 11/12/2025 | 5.1 | Areas Between Curves |  |
| Thu | 11/13/2025 |  |  | HW 4.4-4.5 |
| Fri | 11/14/2025 | 5.2 | Volumes |  |
|  |  |  |  | HW 5.1 |
| Mon | 11/17/2025 | 5.2 | Volumes |  |
| Tue | 11/18/2025 |  | **Quiz 9 (4.3-4.5)** |  |
| Wed | 11/19/2025 | 5.3 | Volumes by Cylindrical Shells |  |
| Thu | 11/20/2025 |  |  | HW 5.2 |
| Fri | 11/21/2025 | 5.3 | Volumes by Cylindrical Shells |  |
|  |  |  |  |  |
| Mon | 11/24/2025 |  | **Thanksgiving** |  |
| Tue | 11/25/2025 |  | **Thanksgiving** |  |
| Wed | 11/26/2025 |  | **Thanksgiving** |  |
| Thu | 11/27/2025 |  | **Thanksgiving** |   |
| Fri | 11/28/2025 |  | **Thanksgiving** |  |
|  |  |  |  | HW 5.3 |
| Mon | 12/1/2025 | 5.5 | Average Value of a Function |  |
| Tue | 12/2/2025 |  | **Quiz 10 (5.1-5.3)** |  |
| Wed | 12/3/2025 |  | Review |  |
| Thu | 12/4/2025 |  |  | HW 5.5 |
| Fri | 12/5/2025 |  | Reading Day |  |
| Sat | 12/6/2025 |  | **Final Exam (8:00-10:00 am)** |  |

The above schedule is subject to change. Students will be notified by Eagle Alert if there is a campus closing that will impact a class.

## Assessing Your Work

| **Assignment** | **Weight** |
| --- | --- |
| Homework | 10% |
| Quizzes | 15% |
| Exams (3) | 50% |
| Final Exam | 25% |
| **TOTAL** | **100%** |

## Grading

A = 90–100 % B = 80–89.9% C = 70–79.9% D = 60–69.9% F = 0–59.9%

Grades are based on mastery of the content. As a rule, I do not grade on a “curve” because that is a comparison of your outcomes to others. I do, however, encourage you to find opportunities to learn with and through others. Please come to office hours if you find yourself struggling.

### Academic Integrity Standards and Consequences

According to UNT Policy 06.003, [Student Academic Integrity](https://policy.unt.edu/policy/06-003) (https://policy.unt.edu/policy/06-003), 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.

## Attendance and Participation

Attendance is required. More than five unexcused absences may lower your grade. Please notify me in advance if you expect to miss class.

Students are expected to actively engage with the material presented during class and participate during class discussions. **Students may use tablets to take electronic notes, but** **the use of laptop computers or cell phones during class is not permitted.**

## Homework Policy

Homework assignments can be accessed via [WebAssign](http://www.webassign.net) (http://www.webassign.net).

* Students may work together on homework assignments, but you should make an honest attempt to solve each problem on your own. You should not copy the solution to a problem directly from your classmate's paper or the solutions manual. Some exercises will be algorithmically generated. (Students will see slightly different questions with different answers.)
* *You should not copy the solution to a problem directly from your classmate's paper, the solutions manual, or the Internet (including GenAI).*

I will drop your **two** lowest homework scores before computing your homework average at the end of the semester.

## Quiz Policy

Quizzes will be given approximately once per week. Quiz problems will be similar to examples in the textbook and/or problems on previous homework assignments. I will drop your **two** lowest quiz scores at the end of the semester.

## Exam Policy

If you miss an exam, a score of zero will be recorded and your academic counselor will be notified. Your score on the final exam will replace your lowest exam score if the final exam score is higher, unless you receive a zero on an exam for cheating. Everything that I say in class is fair game for exam material. Furthermore, I reserve the right to test your ability to solve generalizations of the material covered in class or the textbook. In short, problems on the exams may not look exactly like the examples presented in class or the assigned homework exercises.

Syllabus Change PolicyAny changes to the syllabus will be announced in class and/or posted on Canvas.

## 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.