Calculus I
MAT 1404
Spring 2025

Instructor:	Dr. Matt Dallas
Office:	Haggerty Science Center 051
E-mail:	mdallas@udallas.edu

Class Meeting Times:	MW 8:00 - 8:50 AM in HSC 101 TR 8:30 - 9:20 AM in HSC 101
Office Hours:	MW 10:00 - 11:00 AM & 1:00 - 2:00 PM TR 2:00 - 3:00 PM

Prerequisites MAT 1303 or consent of instructor.

Course Description and Objectives This course covers the fundamentals of differential calculus. We will study limits, continuity, the Intermediate Value Theorem, derivatives, the Mean Value Theorem, integration, and the Fundamental Theorem of Calculus. The first few lectures will be spent reviewing essential material from precalculus and trigonometry.

Required Materials James Stewart, *Calculus: Early Transcendentals*, 9th ed. **Make sure you have the 9th edition**. Homework problems will be assigned from this edition only.

Grades

Participation: 10%	Problem Presentations: 10%	Homework: 30%	Exams: 50%

Your final grade will be rounded to the nearest hundredth and a letter grade will be given using the following grading scale:

90.00-100 A	87.00-89.99 A−	84.00-86.99 B+	80.00-83.99 B
77.00-79.99 B−	74.00-76.99 C+	68.00-73.99 C	64.00-67.99 C−*
62.00-63.99 D+	57.00-61.99 D	54.00-56.99 D−	0-53.99 F

Participation As stated below in **Attendance**, you are expected to attend class. There will be many days where you solve problems in groups on the board. It is very important that you participate in these active learning sessions. I will not necessarily take attendance everyday, but chronic unexcused absences will be noticed and affect your Participation grade.

Problem Presentation You are responsible for presenting **two** calculus problems to me in my office during the semester. You will select these from the additional practice problems provided with each homework set (see **Homework**). You will be graded on the validity of your solution, your ability to communicate your solution, and ability to answer questions about it. Precalculus problems do **not** count.

Homework Homework, abbreviated HW, will be assigned regularly. Each homework will have a set of required problems, as well as a set of additional suggested problems that will not be collected. You may use these problems as extra practice when preparing for exams, and you will select your presentation problem from the this set. Any type of question that appears on the homework could appear on an exam. You are encouraged to discuss homework problems with your classmates, but **the work you submit must be your own.** Late work will **not** be accepted. For more details see *Homework Rubric* on Brightspace.

Exams Exams will be held during class. You may use a calculator, but **graphing calculators are not permitted in exams.** Tentative exam dates are as follows:

Exam 1: Wednesday, February 5 **Exam 2**: Tuesday, February 25

Exam 3: Tuesday, March 3 **Exam 4**: Wednesday, April 23

Final The final will be held on Tuesday, May 13 from 8:00 AM to 10:00 AM in Haggerty Science Center 101 (our regular room). The final will be cumulative, but will emphasize the material not covered by the previous exams.

Attendance You are expected to attend class. After three unexcused absences you will receive a warning letter from the Registrar. Additional unexcused absences can result in forced withdrawal from the course. Visit Class Attendance Policy for information regarding absences due to athletic and University-sponsored events. If you are attending a University-sponsored event that will cause you to miss an exam, you must let me know **at least two weeks in advance.**

Academic Dishonesty The University's policy on academic honesty may be found here. Collaboration on problems is encouraged, but the expectation is that the work you submit is your own. If you run into difficulties with a problem, the best thing to do is ask a friend or your instructor.

I understand that **generative AI** such as ChatGPT can be helpful for various tasks, so my policy is not total prohibition. I only ask that if you choose to use a generative AI, due so with caution. They are not experts in mathematics, or any other field, and can produce inaccurate, misleading, or outright incorrect results. Further, if you rely on sources besides yourself to solve homework problems, it is likely that your exam and presentation scores will suffer.

Accommodations Students with a qualifying disability may request accommodations here. You must provide me with a letter of accommodation no later than the fourth day of class. You must also schedule a meeting with me within a week of submitting your letter to discuss those accommodations that are mutually acceptable. **Accommodations will not be granted without an accommodation letter.**

Important Sp25 Dates *Classes Begin* Wednesday, January 22; *Spring Break* March 15 - March 23; *Easter Break* April 17 - April 21; *Classes end Thursday*, May 8

Note: Information in this syllabus is subject to change. Any changes will be clearly announced in class and through e-mail.

Tenative course calendar on next page.

Tentative Schedule

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	January 20	January 21	January 22 Introduction & Appendices A-B	January 23 Appendix D	January 24
Due					
2	January 27 1.1 - Functions	January 28 1.2 - Mathematical Models	January 29 1.3 - New Functions from Old	January 30 1.4 - Exponential Functions	January 31
Due					
3	February 3 1.5 - Inverse Functions and Logarithms	February 4 1.5 - Inverse Functions and Logarithms	February 5 **Exam 1**	February 6 2.1 - The Tangent and Velocity Problems	February 7
Due					
4	February 10 2.2 - The Limit of a Function	February 11 2.3 - Limit Laws	February 12 2.3 - Limit Laws	February 13 2.5 - Continuity and IVT	February 14
Due					
5	February 17 2.6 - Limits at Infinity	February 18 2.7 - Derivatives and Rates of Change	February 19 2.8 - The Derivative as a Function	February 20 2.8 - The Derivative as a Function	February 21
Due					
6	February 24 Exam 2 Review	February 25 **Exam 2**	February 26 3.1 - Derivatives of Polynomial and Exponential Functions	February 27 3.2 - The Product and Quotient Rules	February 28
Due					
7	March 3 3.3 - The Derivatives of Trigonometric Functions	March 4 3.4 - The Chain Rule	March 5 3.4 - The Chain Rule	March 6 3.5 - Implicit Differentiation	March 7
Due					
8	March 10 3.6 - Logarithmic Differentiation	March 11 3.6 - Derivatives of Inverse Functions	March 12 3.9 - Related Rates	March 13 3.7 - Rates of Change in Natural & Social Sciences	March 14
Due					

Week	Monday	Tuesday	Wednesday	Thursday	Friday
9	March 17 Spring Break	March 18 Spring Break	March 19 Spring Break	March 20 Spring Break	March 21 Spring Break
Due					
10	March 24 Exam 3 Review	March 25 **Exam 3**	March 26 4.1 - Minimum and Maximum Values	March 27 4.2 - The Mean Value Theorem	March 28
Due					
11	March 31 4.2 - The Mean Value Theorem	April 1 4.3 - Derivatives and the Shapes of Graphs	April 2 4.3 - Derivatives and the Shapes of Graphs	April 3 4.8 - Newton's Method	April 4
Due					
12	April 7 4.4 - Indeterminate Forms & l'Hôpital's	April 8 4.4 - Indeterminate Forms & l'Hôpital's	April 9 4.5 - Curve Sketching	April 10 4.5 - Curve Sketching	April 11
Due					HW12
13	April 14 4.7 - Optimization Problems	April 15 4.7 - Optimization Problems	April 16 4.9 - Antiderivatives	April 17 Easter Break	April 18 Easter Break
Due					
14	April 21 Easter Break	April 22 Exam 4 Review	April 23 **Exam 4**	April 24 5.1 - The Area and Distance Problem	April 25
Due					
15	April 28 5.2 - The Definite Integral	April 29 5.3 - The Fundamental Theorem of Calculus Part 1	April 30 5.3 - The Fundamental Theorem of Calculus Part 2	May 1 Proof of the Fundamental Theorem of Calculus	May 2
Due					
16	May 5 5.4 - Indefinite Integrals and the Net Change Theorem	May 6 5.5 - The Substitution Rule	May 7 5.5 - The Substitution Rule	May 8 Review	May 9
Due					

Final Exam is Tuesday, May 13 from 8:00 AM - 10:00 AM in Haggerty Science Center 101