



Calculus 1

MA 125

Instructor Info —



Adam Carty



acarty@uab.edu

Prerequisites —



C or Higher in Pre-Calculus, AND



C or Higher in Trig, OR



Placement Test Score

Assignment Types



Participation: Course Notes Submission & Lecture Warm-up's



2 WebAssign HW's per Week



Weekly Quizzes In Lab Class



Lab Assignments - Submit Online



3 Midterm Exams and 1 Final Exam

Overview

Calculus 1 is the foundation for higher level mathematics, but also for having any sort of basis to understand the physical laws of the universe. The universe is dynamic, and Calculus is about studying change, and determining how much change can occur on an infinitesimal level. A good understanding of Calculus will allow students to interpret predictive models for finance, projectile motion, disease spread, and many other applications. We will begin the course with a short review of essential functions, and functions characteristics (zeros, increasing/decreasing, positive/negative, turning points, etc.). We will continue with limits, quickly building up to derivatives. We will cover a wide array of formulas for calculating derivatives. In Module 3 we will study area under a function's curve, and relate that to derivatives through the Fundamental Theorem of Calculus.

Material

Required Texts

Stewart, James. *Essential Calculus* Cengage Learning. 2nd edition (2013). E-Book Comes with UAB Opt-In Through Webassign

WebAssign

Webassign - Access through Canvas and use the University-wide First-Day Access to pay

Lecture Notes

Download or print the lecture notes each class. Fill them out **IN YOUR OWN HAND-WRITING**, write your name at the top, and submit for credit.

Grading Scheme

22%	Webassign Homework
13%	Weekly Quizzes - In the Lab
13%	Lab Assignments
30%	Midterm Exams, 10% each - NO DROPPED EXAM
10%	Cumulative Final
8.8%	Lecture Notes, 0.4 points each
2.2%	Lecture Warm-Ups, 0.1 point each
1%	Exam Reviews, 0.25 points each

Grades will follow the standard scale: A = 88-100; B = 75-87; C = 62-74; D = 50-61; F <50.

Webassign Homework

There is one webassign homework corresponding to each lecture. The assignment is designed to take between 1-2 hours to complete altogether. Please reach out to your TA for help when needed, but always **TRY THE PROBLEM YOURSELF** before seeking help. See this link for more information on UAB First Day Access: [LINK](#).

Quizzes

Each week there will be a quiz during the lab class. The quiz is designed to take 15-20 minutes.

FAQs

? How do I sign up/pay for Web Assign?

! You are automatically enrolled in the UAB First-Day Access program which includes Webassign access as part of your course fees. If you wish to opt-out (only recommended if you have Cengage Unlimited), go to "Course Materials" on our canvas page.

? How do I submit the completed lecture notes?

! After completing the lecture notes, use a scanning app to turn the completed notes into a pdf. Then submit them on canvas. (Note: no other document types will be accepted, including jpeg's and png's)

? What if I miss a deadline?

! For Cengage (Webassign) assignments, there is an option to request an extension within the assignment. Click that button and give a brief statement about why you need the extra time.

? Will the exams be curved? Do I get to use a note card with formulas?

! The exams will generally not be curved. You cannot bring your own note card, but a reference sheet will be provided for you during the exam. You can view the reference sheet ahead of time on canvas.

Exams

There will be 3 midterm exams throughout the semester (each exam will be part multiple-choice and part free-response), one at the end of each unit (see course schedule for dates). The final exam will be cumulative. Each exam is worth 10%. You may use any calculator without internet connection on the exam. A reference sheet which you may view ahead of time on canvas will be provided during the exam.

Lecture Notes

In order to ensure class participation, students will submit a copy of their filled-in notes from each lecture (written in THEIR OWN HANDWRITING with their name signed at the top). Students may either download the guided notes onto a tablet, or they may print them and fill them out that way. As long as the writing is done IN THEIR OWN HANDWRITING and then submitted on canvas afterward. For students who choose to print the notes, use an app such as CamScanner to take a picture of the notes and convert them to pdfs. Then upload them on canvas.

Lab Assignments

Students will complete one lab assignment each week. This assignment is intended to be exploratory in nature, and to help students practice writing out their work. This assignment will be scanned and **submitted on canvas and it will be graded for correctness** (rather than just completeness).

Make-up Policy

An excused absence will allow you to make up quizzes, exams, warm-ups, and labs within one week. It is your responsibility to reach out to your instructor or TA to schedule a time to make up missed exams or quizzes. If you miss a deadline on a canvas assignment, please provide your excuse when you request an extension. Accompanying paperwork such as a document from a medical professional or a court (for jury duty or other mandatory court appearance) is only required for exams, otherwise, just explain your excuse in your own words.

Diversity and Inclusivity Statement

We consider this classroom to be a place where you will be treated with respect, and we welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability - and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

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Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation:

1. Register with UAB's Disability Support Services (<https://www.uab.edu/students/disability-support-services>) by providing appropriate documentation.
2. Email your instructor (lwickman@uab.edu) your accommodation letter, along with any additional information.
3. Register for the exams through the DSS (if you get extended time) to ensure testing accommodations are met.

This should be done as early as possible in the semester. However, you can submit your accommodation letter to the instructor at any point in the semester.

Academic Integrity

UAB students are bound by the Academic Integrity Code, which can be found here: <https://www.uab.edu/one-stop/images/documents/academic-integrity.pdf>. Instances of cheating will be dealt with according to the code.

Campus Resources

There are many counseling and wellness programs available to you as a UAB student. If you or a friend is in distress, please visit <https://www.uab.edu/students/counseling-resources> for a list of available resources and reach out for help.

Extra Help

There are many opportunities available for extra help. One of the most useful is the Math Learning Lab. You can attend without an appointment and get help with any math class (up to Calculus 2). Learning Lab information can be found at this link: <https://www.uab.edu/cas/mathematics/student-resources/math-learning-lab>

Class Schedule

MODULE 1: Limits & Basic Derivatives

Week 1	Lecture 1 - Review of Function Essentials	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Wednesday, 1/11/23
	Lecture 2 - Introduction to Limits	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Sunday, 1/15/23
	Lab Assignment 1 - Classifying Functions	Submit Online by 11:59 p.m. on Sunday, 1/15/23
	Quiz 1 - During Lab Class	
Week 2	Lecture 3 - Limits & Continuity	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Wednesday, 1/18/23
	Lecture 4 - Continuity & Infinity	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Sunday, 1/22/23
	Lab Assignment 2 - Limits	Submit Online by 11:59 p.m. on Sunday, 1/22/23
	Quiz 2 - During Lab Class	
Week 3	Lecture 5 - Introduction to Derivatives	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Wednesday, 1/25/23
	Lecture 6 - Basic Derivative Formulas	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Sunday, 1/29/23
	Lab Assignment 3 - Continuity	Submit Online by 11:59 p.m. on Sunday, 1/29/23
	Quiz 3 - During Lab Class	
Week 4	Lecture 7 - The Product & Quotient Rules	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Wednesday, 2/1/23
	Lecture 8 - The Chain Rule	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Sunday, 2/5/23
	Lab Assignment 4 - Derivatives	Submit Online by 11:59 p.m. on Sunday, 2/5/23
	Quiz 4 - During Lab Class	
Week 5	Practice Test for Exam 1 (Lectures 1-8)	Submit Review Notes by 11:59 p.m. on Wednesday, 2/8/23
	Exam 1 (Lectures 1-8)	Thursday, 2/8/23 (In-Class)
	Lab Assignment 5 - Chain Rule	Submit Online by 11:59 p.m. on Sunday, 2/12/23
	Quiz 5 - During Lab Class	

MODULE 2: Applications of Derivatives

Week 6	Lecture 9 - Implicit Differentiation	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Wednesday, 2/15/23
	Lecture 10 - Linear Approximations	Submit Completed Lecture Notes & Webassign HW 11:59 p.m. on Sunday, 2/19/23

Lab Assignment 6 - Tangent Line Equations

Submit Online by 11:59 p.m. on Sunday, 2/19/23

Quiz 6 - During Lab Class

Week 7

Lecture 11 - First Derivative Test for Extrema

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Wednesday, 2/22/23

Lecture 12 - Concavity Test & Second Derivative Test

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Sunday, 2/26/23

Lab Assignment 7 - Implicit Differentiation

Submit Online by 11:59 p.m. on Sunday, 2/26/23

Quiz 7 - During Lab Class

Week 8

Lecture 13 - Optimization Problems

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Wednesday, 3/1/23

Lecture 14 - Newton's Method

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Sunday, 3/5/23

Lab Assignment 8 - Extreme Values

Submit Online by 11:59 p.m. on Sunday, 3/5/23

Quiz 8 - During Lab Class

Week 9

Lecture 15 - Antiderivatives

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Wednesday, 3/8/23

Practice Test for Exam 2 (Lectures 9 - 15)

Submit Review Notes by 11:59 p.m. on Sunday, 3/20/23

Lab Assignment 9 - Curve Sketching

Submit Online by 11:59 p.m. on Sunday, 3/12/23

Quiz 9 - During Class

No School Spring Break

March 13 - March 19

MODULE 3: Integration & The Fundamental Theorem of Calculus

Week 10

Exam 2 (Lectures 9-15)

Tuesday, 3/21/23 (In-Class)

Lecture 16 - Areas & Distances

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Sunday, 3/26/23

Lab Assignment 10 - Intro to Area Under a Curve

Submit Online by 11:59 p.m. on Sunday, 3/26/23

Quiz 10 - During Lab Class

Week 11

Lecture 17 - The Definite Integral

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Wednesday, 3/29/23

Lecture 18 - Evaluating Definite Integrals & Fundamental Theorem

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Sunday, 4/2/23

Lab Assignment 11 - Riemann Sums

Submit Online by 11:59 p.m. on Sunday, 4/2/23

Quiz 11 - During Lab Class

Week 12

Lecture 19 - The Substitution Rule

Submit Completed Lecture Notes & Webassign HW 1
11:59 p.m. on Wednesday, 4/5/23

Lecture 20 - Inverse Functions

Submit Completed Lecture Notes & Webassign HW 2
11:59 p.m. on Sunday, 4/9/23

Lab Assignment 12 - The Fundamental Theorem

Submit Online by 11:59 p.m. on Sunday, 4/9/23

Quiz 12 - During Lab Class

Week 13 Lecture 21 - Natural Log & Exponential

Submit Completed Lecture Notes & Webassign HW 2
11:59 p.m. on Wednesday, 4/12/23

Lecture 22 - Logarithms, Exponential Functions,
Growth & Decay

Submit Completed Lecture Notes & Webassign HW 2
11:59 p.m. on Sunday, 4/16/23

Lab Assignment 13 - U-Substitution

Submit Online by 11:59 p.m. on Sunday, 4/16/23

Quiz 13 - During Lab Class

Week 14 Review (Lectures 15 - 22)

Sumit Review Notes by 11:59 p.m. on Wednesday, 4/19/23

Exam 3 (Lectures 15 - 22)

Thursday, 4/20/23 (In-Class)

No Lab

No Quiz

Week 15 Cumulative Final

Wednesday, 4/26/23 (1:30 - 4:00 p.m.)
