Differential Calculus

Last Updated: Sun, 01/04/2026

Course prefix: MATH

Course number: 1551

Section: G and M

CRN (you may add up to five):
33302 29417

Instructor First Name: Thomas

Instructor Last Name: Tran

Semester: Spring

Academic year: 2026

Course description:

Differential calculus including applications and the underlying theory of limits for functions and sequences.

MATH 1551 is a coordinated course with a course coordinator (Prof. Thomas Tran). This means that all lectures and studios use the same materials and calendar, and we also use versions of the same assessments.

Course learning outcomes:

- Make sense of mathematical expressions and graphs involving functions and their derivatives.
- Compute mathematical quantities using differential calculus and interpret their meaning.
- Analyze mathematical statements and expressions.
- Write and communicate your mathematical reasoning effectively.
- Apply calculus concepts to solve real- world problems such as optimization and related rates problems.

Required course materials:

Textbook: Thomas, *Calculus: Early Transcendentals,* 15^{th} ed*.* We will discuss topics in chapters 1 to 4. An online version of the textbook is automatically included with a *MyMathLab subscription*. This particular textbook is the one we will follow, but *it is not*

required that you have a copy. Any calculus textbook will be a good reference.

Grading policy:

- *Your final average will be computed using whichever of the following two options gives you the higher grade:*
  - *Option 1: Lecture Attendance and Reading Assignment Quizzes (2%), Studio Participation Quiz (5%), WeBWork Homework (10%), Best Two Midterms (40%), Lowest Midterm (20%), Final Exam (23%)*
  - *Option 2: Lecture Attendance and Reading Assignment Quizzes (2%), Studio Participation Quiz (5%), WeBWork Homework (10%), Best Two Midterms (40%), Lowest Midterm (0%), Final Exam (43%)*
- *Letter grades will be determined based on the following intervals. You will be guaranteed a minimum of the following scale:*
  - A: 90% and higher, B: [80%, 90%), C: [70%, 80%), D: [60%, 70%), F: [0%, 60%).
  - *Students should not expect any changes to these intervals, and changes (if any) to these intervals will only be made after the final exam*. Percentage grades are *not necessarily* rounded to the nearest integer before conversion to letter grades. For example, 89.999% is converted to a B, 79.9999% is converted to a C, and so on.
  - *If any changes to the grade cutoffs are made, they will be in your favor (i.e., the cutoff for an A may be lowered to an 89.5, but will not be raised above 90), and will not be announced per course policy. Such changes will apply to all students uniformly. Individual "grade bumps" will NOT be considered under any circumstances- please do not submit such requests to your instructor or the coordinator.*
- *Grade Incentive*: As a general rule, you should not expect adjustments to your grade, either for individual assignments or your overall course grade. However, there is *one exception:*
  - *CIOS Completion Bonus:* We truly value your feedback and see it as an important part of your role in shaping your education. If at least 70% of each lecture section completes the CIOS survey by 5:00 PM on TBD, we will add an extra credit reflection question to the final exam, *worth 3% of the exam grade.*

Attendance policy:

When signing up for MATH 1551, you signed up for a specific lecture and studio.

- *You must attend the lecture section you signed up for, as the rooms are at capacity***.** *Lecture attendance is required*. The goal of lectures is to learn and discover new material together. In accordance with federal law, only accessible files will be posted on Canvas for student usage. Unfortunately, that means we are unable to post, email, or otherwise share materials that are not in such format. For instance, we are prohibited from posting handwritten class notes. To obtain those materials, please be sure to attend your class lectures.

- *Studio attendance is required. You must attend the studio section you signed up for.* Studio attendance is valuable, and we'd like to encourage you to go! The goal of problem-based studios is to *work in groups through active learning*, and reinforce the concepts and ideas introduced in lecture. This is your chance to personally internalize and master the new concepts from the week.
    - Please note that quizzes will be administered during the last 5 minutes of studios. *You should not expect to be allowed to take the quiz if you have not been present for the entire studio session.*

Academic honesty/integrity statement:

All students are expected to comply with the Georgia Tech Honor Code (the honor code can be found at http://osi.gatech.edu/content/honor-code). Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Office of Student Integrity. Cheating includes, but is not limited to:

- Using a calculator, books, or any form of notes on tests.
- Copying directly from **any** source, including friends, classmates, tutors, internet sources (including Wolfram Alpha or Chegg etc.), or a solutions manual. This applies to your homework as well! You can get help, but it's important that you take ownership of your work.
- Allowing another person to copy your work.
- Taking a test or quiz in someone else's name, or having someone else take a test or quiz in your name.
- Asking for a regrade of a paper that has been altered from its original form.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the STEM area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork