

# MATH 2550 Syllabus

Introduction to Multivariable Calculus, Section G, 2 credit hours

Fall 2026

## Instructor Information

Instructor: Dr. Benjamin McKenna

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## General Course Information

### Description

From the catalog: “An introduction to multivariable calculus through vectors in 3D, curves, functions of several variables, partial derivatives, min/max problems, multiple integration. Vector Calculus not covered.”

### Course Learning Outcomes

Upon successful completion of this course, students should be able to:

- Work fluently with two- and three-dimensional vectors, surfaces, functions, and curves and their geometric interpretations.
- Work fluently with derivatives and integrals of functions of several variables.
- Write logical progressions of precise mathematical statements to justify and communicate their reasoning.
- Apply concepts from multivariable calculus to model, solve, and analyze real-world situations.

### Prerequisites

Informally: Single-variable calculus, and linear algebra at the level of MATH 1553.

Formally: MATH 1502 OR MATH 1512 OR MATH 1555 OR MATH 1504 ((MATH 1552 OR MATH 15X2 OR MATH 1X52) AND (MATH 1522 OR MATH 1553 OR MATH 1554 OR MATH 1564 OR MATH 1X53))

In order to succeed in this course, you should have good working knowledge of the prerequisites, in the sense of being able to do single-variable calculus and linear algebra fluently as one part of a multivariable calculus problem.

### Required Course Materials

**Optional textbook:** Thomas, *Calculus: Early Transcendentals* 15th edition by Addison-Wesley (Pearson). The textbook is *not* required for the class; many good references for the material of MATH 2551 can be found online or at the campus library.

A few online resources are listed below in no particular order:

- OpenStax Multivariable Calculus
- APEX Calculus
- Active Calculus - Vector Calculus
- Diana Davis' Multivariable Calculus
- Paul's Online Notes

- Khan Academy Multivariable Calculus

## Grading Policy

The course grade will be based on homework, quizzes, midterm exams, and a final exam. There will likely be an option to choose to have a small portion of your grade come from class attendance.

After all grades are in and all overall percentage scores for students have been computed using the weights described above, letter grades are assigned. The standard cutoffs are as follows.

$$A : [90\%, 100\%] \quad B : [80\%, 90\%) \quad C : [70\%, 80\%) \quad D : [60\%, 70\%) \quad F : [0, 60\%)$$

So, to guarantee an A, get 90% or better overall; to guarantee at least a B grade, get 80% or better overall, etc. These cutoffs *might* be adjusted, but only in the downward direction (to make letter grades higher, i.e., in your favor), and this decision will only be made at the end of the semester after the final exam is graded.

## Description of Graded Components

A course calendar will be posted by the first day of class. All due dates for the homeworks, as well as exam dates (quizzes and midterms), will be posted to this calendar. The time and place of the final exam are TBD, but likely in our usual lecture hall (the registrar sets the time and place; the time is usually finalized by the first day of class, but the place is usually not).

- **Homework** will be due regularly.
- There will be regular **quizzes** during studio periods. In all exams in this course (quizzes, midterms, and final), no books, notes, calculators, cell phones, or other electronic devices are allowed.
- There will be several (tentatively three) **midterm exams**, during lecture.
- **A final exam** will take place at the time and place set by the registrar.
- **Class attendance** is described in “Attendance and Participation” below.

## Course Policies

### Attendance and Participation

Attendance will be taken once per day at a random time. It will be possible to receive 100% of the class attendance points without attending 100% of the classes, but this is only relevant for those who choose the grading scheme that includes class attendance.

### Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech’s Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

### Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

## **Student-Faculty Expectations Agreement**

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.