

# MATH 2552 Syllabus

Differential Equations, Section-C, 4-credit hours.

Fall 2026.

## Instructor Information.

Instructor: Mamillapalle, Karthikeya Sameer Kumar.

Email: kmamillapalle3@gatech.edu.

## General Course Information:

### Description:

This course teaches methods solving elementary differential equations, including first-order equations and linear equation systems. Applications are also discussed with modeling. Qualitative studies of solutions, emphasizing stability and instability, are discussed throughout the course.

### Course Learning Outcomes:

1. Solve first-order differential equations.
2. Solve first-order linear differential systems.
3. Solve second-order linear differential equations.
4. Solve differential equations using Laplace transforms.
5. Solve some real-world problems using differential equations.
6. Analyze stability within linear and nonlinear differential equation solutions..
7. Solve first-order differential equations using basic numerical methods.

### Required Course Materials:

Title: Differential Equations-An Introduction-to-Modern Methods and Applications.

Edition: Third Edition.

Authors: James Brannan and William Boyce.

Publisher: John Wiley & Sons.

Availability: Georgia Tech Barnes & Noble Bookstore.

### Grading Policy:

Quizzes-24%, Midterms-34%, Final-37%; online Homework-5%.

### Grading Scale:

A $\geq$  90; B $\geq$  80; C $\geq$  70; D $\geq$  60, F < 60.

## Description of Graded Components:

1. Quizzes:
  - (a) Quiz Requirements: Five total assessments.
  - (b) Score Adjustment: Dropping the lowest quiz performance.
  - (c) Weighting: 6% per quiz
2. Midterms:
  - (a) Midterm Requirements: Two total assessments.
  - (b) Weighting: 17% per midterm
3. Online homework:
  - (a) Homework Platform: Online assignments via WeBWork.
  - (b) Score Policy: Dropping the two lowest performances from HW01-HW15.
4. Final-Exam:
  - (a) Final-Exam Requirements: One assessment.
  - (b) Weighting: 37%
5. Students attend quizzes, midterms & final in-person. These assessments require completing work without using external notes or textbooks. The instructor prohibits the use of any electronic equipment during these in-person assessments.

## Course Policies:

### Extra Credit Opportunities:

1. **Studio Attendance:** Maintain 80-percent attendance within enrolled studio sessions and earn a 1-percent final average bonus. Digital learning days, the first week, and the final session include "present" marks.
2. **CIOS Survey:** Achieving 85-percent lecture CIOS response-rate before the final session grants all students a 1-percent course average bonus.

### Attendance and Participation:

Regular class attendance directly correlates with higher scores. Please attend each class. Inform me regarding absences. Staying current remains our priority.

### Academic Integrity

Students must maintain highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct. Suspected assessment violations necessitate Office of Student Integrity notification, investigation, & penalties.

### 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**

The Student-Faculty Expectations document details mutual requirements. Practice Georgia Tech ideals consistently throughout this term.