

**MATH 1551 DIFFERENTIAL CALCULUS**

GEORGIA TECH EUROPE

**COURSE SYLLABUS****Updated on Jan 25, 2025**

Welcome to Differential Calculus! This course is designed to introduce you to some fundamental concepts of single variable Calculus. All our students play an important role in our educational mission.

**Course Description****Course Title:** Differential Calculus**Course Meeting Times:** MTW 8:25 – 9:15 (MT : Lecture, W : Studio)

## Instructor Contact Information

**Instructor :** Hyun Jeong KIM

**Office:** 103B

**Office Hours:** TBA

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## Textbook

*Calculus: Early Transcendentals*, 14<sup>th</sup> ed. by G. B. Thomas Jr. Pearson. ISBN 978-1292253220. The GT Bookstore has online, hard cover, and soft cover editions available. Select topics from chapter 1, 2, 3, and 4 will be covered. MyMathLab (MML) is required for this course. **We will set this up together on the first day of our class, so please do not buy an access code in advance.**

### Important notes on MML:

- If you already have an account on MyMathLab using this combined textbook within the past 18 months, then you do not need to purchase a new code. Login to your account on MyMathLab, select the option to add a new course, and enter **our course ID (will be posted on Canvas on the first day)**.
- If you already have a MyMathLab account that used either the Thomas or the Lay textbook in the past 18 months, but you were unable to add our course using the previous step, please **contact Pearson's customer service** to result the problem. You should receive a reply within 36 business hours from the Pearson support team regarding your account status. In the meantime, you can access our course using the "temporary access" option when registering. Please do not pay for a new code until you receive a reply from Pearson.
- If you do not have a MyMathLab account using the Thomas or Lay textbooks, or if your account is over 18 months old, you will **need to purchase a new code for our course**. You could buy a code either for one semester only or for 18 months with which you will be using for other calculus and linear algebra classes (Math1552, 1554, 2550, 2551) for the next 12 months.

MyMathLab comes with an entire electronic version of the textbook; it is your choice if you would also like to own the textbook in print. You may purchase a MyMathLab code either from the bookstore or on-line while registering at <http://www.mymathlab.com>. If you prefer to own a hardcopy of the text, the bookstore offers packages of MyMathLab combined with a loose-leaf or hardcover version of the Thomas textbook that is less expensive than purchasing the text and code separately.

**PLEASE NOTE:** GEORGIA TECH HAS A SPECIAL CODE PACKAGE THAT INCLUDES BOTH TEXTBOOKS. THIS CODE CAN ONLY BE PURCHASED THROUGH THE CAMPUS BOOKSTORES

OR DIRECTLY FROM PEARSON. CODES PURCHASED BY OTHER VENDORS WILL NOT WORK!  
Possible ISBNs for this text are: 1323131760, 1323132112, 132313204X, 1323132104, or 1323132120.

## Assessments & Information

**HOMEWORK:** Homework will be assigned on-line (MML) every week. You are expected to understand all homework problems for the tests. Exercises on MyMathLab will be **due on Tuesdays at 11:59 PM** (except during class recesses or as announced otherwise in class). The **lowest two homework grades will be dropped**. **Late assignments** are allowed with a **penalty of 20%**. I strongly encourage you to write your solution fully on a paper before you type in your answer. I will also expect you to read ahead to prepare for each class lecture.

**PARTICIPATION: Attending class is important.** Class attendance and participation for both lectures and studios will be recorded and scored on a **0-2 scale**. The scale is determined as follows: **2 points for above 80%** attendance, **1 point for 50%-80%** and **0 for below 50%**. The participation grade will be added onto the final average at the end of the term, affecting all borderline grades. **Late arrivals** will be also noted.

**QUIZZES:** There will be **five** quizzes of **20** minutes on **Wednesdays**. Tentative dates are **Aug 27, Sep 10, Oct 8, Oct 22 and Nov 26**. **One lowest quiz** score will be dropped.

**MIDTERMS:** There will be **two** midterms of **50** minutes. Tentative dates are **Sep 24 (Wednesday) and Nov 14 (Friday)**. There's no dropping for midterm.

**Important :** The dates for all the exams are already published. Please do not make any plan for travel for these dates as no make-up or earlier tests will be allowed! Missing test will be marked as 0.

**FINAL EXAM:** The final exam will cover all course materials and will be administered during the final exam period (the exact date will be announced later.) for **2 hours and 50 minutes**. All students must take the final examination and should not plan for travel during the final exam period before all the exam dates are fixed.

**Assessments:** Tests will be returned in class. Quiz-solution and Midterm-solution will be posted on Canvas after the exam for Review.

**Information:** Announcements, Extra Assignments and Course Slides will be posted on Canvas.

## Grades

Final grades will be calculated using whichever of the following weights yields the higher grade.

Assessment	Weight 1	Weight 2
Participation	2%	2%
12 best Homework	5%	5%
4 best Quizzes	23%	23%
2 Midterms (Better midterm 65% + The other 35%)	30%	40%
Final Exam	40%	30%

Letter grades will be determined based on the usual intervals. **A:** 90% and higher, **B:** [80%, 90%), **C:** [70%, 80%), **D:** [60%, 70%), **F:** [0%, 60%). For example, a final grade of 89.99% is converted into a B, a final grade of 79.99% is converted into a C, and so on. Any changes to these intervals would only be made after the final exam.

A **midterm grade** will be assigned around **September 30**. A satisfactory grade will be assigned to all students with a midterm average of 70% or higher.

## Prerequisite, Learning Outcomes and Topics

### Prerequisites:

Math SAT Section Score (new SAT) of 620 **or** ACT 26 **or** ACT equivalent 600 **or** MATH 1113 Precalculus.

**The primary goals of this course** are to

1. explore fundamental concepts of single variable calculus
2. explore the solution of problems from a mathematical perspective, and to
3. help prepare students to succeed in upper level math, science, engineering and other courses that require calculus.

### Learning objectives :

- **Construct** mathematical expressions and graphs involving functions and their derivatives.
- **Compute** mathematical quantities using differential calculus and **interpret** their meaning.
- **Analyze** mathematical statements and expressions (for example, to assess whether a particular statement is accurate).
- **Write** logical progressions of precise statements to justify and communicate mathematical reasoning.
- **Apply** calculus concepts to solve real-world problems such as optimization and related rates problems.

Some of the topics that are explored in this course include the following.

- Basic calculus concepts such as limits, derivatives, optimization.
- The graphing of functions using calculus.
- The use of differential calculus to solve physics, geometry, and optimization problems.

## Expectations

### Students

Students are expected to attend lectures and recitations and behave at all times in a respectful manner to their instructor, teaching assistants, and fellow students. Students are expected to study the subject matter outside of class time, review this syllabus, review their graded work in a timely manner for potential marking errors and to review where mistakes were made (if any), and ask for help when needed. Students are responsible for obtaining any announcements or materials posted on Canvas, sent by email or communicated orally in class.

### Instructor

As your instructor, my role is to facilitate interactive lectures, coordinate with teaching assistants to grade student work and facilitate learning activities, provide students with assessments that both develop and measure their understanding and knowledge of the subject matter, provide feedback on their performance,

provide solutions to midterms, and be available for assistance when requested.

## Preparing for Tests

Practice materials and additional office hours will be offered prior to each test. Depending on your goals, you may need to complete additional work beyond homework, worksheets, and practice materials to adequately prepare for them.

## Tests Policies

### Tests Procedures

- Books, notes, cell phones, and calculators are NOT allowed during tests.
- Students may have something to write with and an eraser when taking tests.
- Unless students are asked to use a particular method or theorem, they are allowed to use any approach to solve any problem they are given on any test.
- Unless indicated otherwise, students must adequately justify their reasoning for full marks.
- Marks can be taken off in a test for not using the correct notation.
- The tests are comprehensive.
- Students who are unable to take any test for any reason are responsible for notifying their instructor prior to the exam and as soon as possible.
- Tests will be returned to students in class.

### Additional Final Exam Procedures

Students take their final exam in the room where they have lectures (as per institute policy). The duration, date, and time of the final exam for local students is listed on the registrar website:

<http://www.registrar.gatech.edu/registration/exams.php> Note that the schedule of the final exam is non negotiable.

### Re-grade Requests for Tests

- 1) If any of your work has been graded in error, you should contact your **instructor** as soon as possible.
- 2) Teaching assistants are not permitted to handle re-grade requests.
- 3) Should you wish to have your work re-graded, do not change or add to the work on your paper.
- 4) A re-grade request can only be submitted if you did something correct that was marked as incorrect.
- 5) Re-grade requests **must be requested within two weeks** after the work has been returned to you.
- 6) You must check your answers with the solutions before submitting such a request.
- 7) To submit a re-grade request, you must send your instructor an email from your GT email account that contains your first and last name, the midterm you are referring to, the question(s) you are referring to, and a description of what was graded incorrectly.

## Illnesses, Emergencies, Absences

Students who will miss a midterm or final exam due to a university-sponsored event or athletics should provide their instructor with the official documentation in advance. Any student who misses a test, with reasonable explanation, can write a make-up. Students must notify their instructor as soon as they can to make necessary arrangements.

## Re-Scheduled/Missed Exams

**NO MAKE-UP EXAMS!** In general, no make-up exams will be given and any missed exam results in a "0" score.

- If you have a valid reason to request a make-up exam, please contact me as early as possible. Only extraordinary cases will be considered.
- In the case of illness and emergency, please contact the Office of Dean of Students immediately. The Dean's office will verify the case, determine the severity of the problem, and then interact with the instructor if necessary.
- Requests for student organization excused absences must be made no later than two weeks prior to the date of the event. No late requests will be honored. Please have your advisor send me a written notice or an e-mail.
- Students who are absent because of participation in a particular religious observance will be permitted to make up the work missed during their absence with no late penalty, provided the student informs me of the upcoming absence, in writing, within the first two weeks of class, and provided the student makes up the missed material within the timeframe established by the course instructor.
- If you have off campus interviews for jobs or graduate/professional schools on the test dates, please contact me as early as possible with a supporting document.

## Class Policies

### Attendance

In the event of an absence, you are responsible for all missed materials, assignments, and any additional announcements or schedule changes given in class. Class disruptions of ANY kind will NOT be tolerated and may result in your removal from the classroom. Please show courtesy to your fellow classmates and instructor by adhering to the following class rules.

- Come to class **on time** and stay for the entire class period.
- Refrain from conversing with your fellow students while the instructor is lecturing.
- Put away any reading materials unrelated to the course.
- **No laptop or cell phones are allowed on the tables.** Please keep them in your bag as these are distraction to yourself and others.
- **Please do not bring food to eat during lectures.** No food is allowed in the classroom as it is GT-Europe policy. You may bring your water.

### Academic Dishonesty

All students are expected to comply with the Georgia Tech Honor Code (see <http://www.policylibrary.gatech.edu/student-affairs/code-conduct>). Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students. Cheating includes, but is not limited to the following.

Using a calculator, cell phone, books, or any form of notes on exams.

Copying directly from **any** source during an exam, including friends, classmates, or a solutions manual.

Allowing another person to copy your work. Taking a test using someone else's name or having someone else take a test in your name.

Asking for a re-grade of a paper that has been altered from its original form.

Using someone else's name to gain participation points for them, or to take tests for them, or asking someone

else to use your identity for any graded or participation submission.

### **Students with Disabilities and/or in need of Special Accommodations**

Georgia Tech complies with the regulations of the Americans with Disabilities Act of 1990 and offers accommodations to students with disabilities. If you are in need of classroom or testing accommodations, please make an appointment with the ADAPTS office to discuss the appropriate procedures. More information is available on their website, <http://www.adapts.gatech.edu>

### **Campus-Wide Dates**

(please check with Registrar for possible updates)

Aug 21 2025 (Wednesday) First day of class

Oct 28 – Nov 03 2025 Fall Break

Dec 02, 03 2025 Final Instructional Class days

Dec 04 2025 Reading Day

Dec 05, 12 2025 Reading periods 8:00 am to 2:40 pm

Dec 05 - 12 2025 Final Exams Session

For further information on campus-wide dates see <http://www.registrar.gatech.edu/calendar>

The date and time of the final exam is scheduled by the registrar.

For **final exam schedules**, see <http://www.registrar.gatech.edu/students/exams.php>.

## TENTATIVE SCHEDULE

Week and Dates	Section Coverage in Lecture	Tests	Registrar
Week 1 Aug 20 – 22	1.1, 1.2		First day of Class on Aug. 20 Class on Friday exceptionally
Week 2 Aug 25 – 28	1.3, 1.5-6	Quiz 1	Quiz 1 on Wed Aug 27 HW 1 due Aug 26
Week 3 Sep 1 – 4	2.2, 2.4		HW 2 due Sep 2
Week 4 Sep 8 – 11	2.5, 2.6	Quiz 2	Quiz 2 on Wed Sep 10 HW 3 due Sep 9
Week 5 Sep 15 – 18	2.1-3.1, 3.2		HW 4 due Sep 16
Week 6 Sep 22 – 25	3.3, Review, Exam	Mid 1	Mid 1 on Wed Sep 24 HW 5 due Sep 23
Week 7 Sep 29 – Oct 2	3.4, 3.5		HW 6 due Sep 30
Week 8 Oct 6 – 9	3.6, 3.7	Quiz 3	Quiz 3 on Wed Oct 8 HW 7 due Oct 7
Week 9 Oct 13 – 16	3.8, 3.9		HW 8 due Oct 14
Week 10 Oct 20 – 23	3.10, 3.11	Quiz4	Quiz4 on Wed Oct 22 HW 9 due Oct 21
Week 11 Oct 27– Nov 2	NO CLASS	NO CLASS	FALL BREAK
Week 12 Nov 3 – 6	4.7, 4.1		HW 10 due Nov 4
Week 13 Nov 10,12,14	4.2, Review, Exam	Mid 2	Nov 11(Tue) Bank Holiday Mid 2 on Nov 14 (Friday) HW 11 due Nov 12 (Wednesday)
Week 14 Nov 17 – 20	4.3, 4.4		HW 12 due Nov 18
Week 15 Nov 24 – 27	4.6, 4.8	Quiz 5	Quiz 5 on Nov 26 HW 13 due Nov 25
Week 16 Dec 1 – 2	Review for Final Exam	Last class on Tuesday	HW 14 due Dec 2

Please use this as an approximate class schedule. Section coverage may change depending on the flow of the course.