MATH 1552 INTEGRAL CALCULUS

GEORGIA TECH EUROPE

COURSE SYLLABUS

Updated on April 30, 2026

Welcome to Integral Calculus!

All our students play an important role in our educational mission.

Course Schedule

Course prefix : MATH **Course number :** 1552 **Section :** R (Lecture) **Section :** R1 (Studio)

Semester : Fall **Academic Year :** 2026

Course Description : Integral Calculus. Definite and indefinite integrals, techniques of integration, improper integrals, infinite series, applications.

Lecture Meeting Times: MW (Kim) 3:30 – 4:45pm **Studio Meeting times:** TR (TA) 1:00 – 1:50pm

Instructor and TA Contact Information

Instructor First Name : Hyun Jeong **Instructor Last Name :** KIM

E-mail: hkim3224@gatech.edu

Office: 303 **Office Hours**: TBA

TA : TBA

Textbook

Calculus: Early Transcendentals, 14th ed. by G. B. Thomas Jr. Pearson. ISBN 978-1292253220. A pdf version will be posted on Canvas. Select topics from chapter 4, 5, 6, 7, 8 and 10 will be covered. Slides with a complete lesson will be posted on Canvas.

Prerequisites, Learning Outcomes and Topics

Prerequisites:

MATH 1550 or MATH 1551 or MATH 1501 or MATH 15X1 or MATH 1X51.

Credit not awarded for both MATH 1552 and MATH 1502, MATH 1504, MATH 1512 or MATH 1555.

- Students will understand the geometric concept of a definite integral and learn how to approximate the integral using Riemann sums.
- Students will be able to evaluate indefinite and definite integrals algebraically using various integration techniques, including substitution, integration by parts, trigonometric substitution, trigonometric identities, and partial fractions.
- The idea of convergence will be applied to improper integrals and infinite series.
- Given an infinite series, students can analyze the function to determine if the series converges by applying an appropriate convergence test (divergence, comparison, integral, ratio or root).
- Taylor series will be constructed for various functions and will be applied to numerical approximation problems and definite integrals.
- Students will understand the proper usage of mathematical notation in relation to the above topics.

The list of which sections are covered in lecture is in the syllabus. Students are not expected to be familiar with the material in the sections that are not covered.

Office Hour and Help

To get help with our course materials, use the office hour of myself and TA. If you need help outside office hours, make appointment with me by email. For those who need help with prerequisite materials such as College algebra, Precalculus and Calculus, a few sessions or more with a TA will be suggested.

Tips for Success

To succeed in Math class, the minimum work you need to do is : Read Course Slides and review examples done in class thoroughly. Try solving examples by yourself with blank slides and then compare with the lecture notes to make your solution complete – a very important step. Do NOT read solution to learn. Review examples done in Studio to learn how formulas are applied. Do homework and practice with suggested extra problems (list on Canvas) from our textbook. **Most importantly**, as soon as you find the course a bit challenging, you should use office hours **regularly** not to get behind.

Communication

Announcements, course-related documents and homework assignments will be posted on **Canvas**.

Assessments

HOMEWORK: Homework will be assigned on-line every week via **Webwork**. Each homework will be due on **Tuesdays** at 11:59 PM (midnight local time no matter what your device says) (except the Easter week. It is Wednesday for that week.) *at which time the solutions will also become available*.

Math is not a spectator sport! Homework is an essential part of the course; the only way to learn math is by doing math.

a. You are expected to understand **all** homework problems for the exams and quizzes. We strongly recommend working homework problems out completely on paper even though that work is not graded- this is your chance to build good habits in your work and ensure you understand every step.

b. ***Late homework will not be accepted, and no extensions will be given for any reason – I don't know how to!*** All homework due dates are currently posted in the WeBWork system and on our course Calendar.

c. There are 14 weekly homework of total 126 points approximately and each weekly homework consists of 2-3 sections of Webwork questions that are due on the same day. The homework component of your grade will be the fraction of points you earn out of 108 (85%), capped at 100% (equivalent to 5% of the final grade) and the rest of the points will be given as bonus to the final exam score up to 1% not to exceed 100%.

d. You are very welcome to **collaborate with other students on solving homework problems (and during Studio)** ; in fact, we encourage you to do so. Talking with others gives you a chance to consider issues you might not have thought of yourself and often improves your understanding. You learn the best when you teach someone. However, it is important that you understand the homework yourself by the end, or quizzes and exams will be of extreme difficulty. Of course, it is ***always*** unacceptable to copy a solution from any source or to look up answers online.

PARTICIPATION: Attending class is important. Class attendance and participation for both lectures and studios will be recorded and scored on a 0-2.5 scale out of 2. The scale is determined as follows: 2.5 points for above 90% attendance for both Lecture and Studio, 2 points for above 80% attendance for both Lecture and Studio, and 1 point for above 80% in one and 80-60% in the other, and 0 otherwise. The participation grade will be added onto the final average with a possible 0.5 bonus at the end of the term, affecting all borderline grades. Late arrivals and early departure will be also noted down as late arrivals and three of late count for one absence.

QUIZZES: There will be 5 quizzes of 30 minutes on Thursdays during Studio. **One** lowest quiz score will be dropped. Each quiz is graded out of 25 points, and the total of 4 best quizzes is out of 100, which is 25% of the final grade – see below the distribution table.

MIDTERMS: There will be 2 midterms of 1 hour 15 minutes on **Wednesdays** during Lecture. There's no dropping for midterm. Each midterm is graded out of 50 points and the total midterm grade out of 100 consists of 60% of the better midterm + 40% of the other, which is 31% or 37% of the final grade - see below the distribution table.

Important : **The dates for all the exams are already published – See the last page.** 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. The final exam schedule is non-negotiable. No earlier or late final exam is allowed. There will be a make-up exam on the last day of the final exam period for all the students who need to make up their final exam with an excused absence. An absence due to travel is NOT an excused absence.

Grades

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

Assessment	Weight 1	Weight 2
Participation	2% (possible 0.5pt bonus to the final grade)	2%
Webwork Homework	5% (possible 1pt bonus to final exam score)	5%
4 best Quizzes	25%	25%
2 Midterms (Better midterm 60% + The other 40%)	31%	37%
Final Exam	37%	31%

CIOS Bonus: When the participation to the survey for both Lecture and Studio is above 85%, there will be 1pt bonus awarded to the entire class.

A **midterm grade** will be assigned around **Oct 6**. A satisfactory grade will be assigned to all students with a midterm average of 70% or higher.

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. There will be NO changes to these intervals because there will be an appropriate curve or make-up test depending on the average for each test. No individual curve, extra credits, or make-up exam (except for absences.) Please do NOT email me asking for extra credits.

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 sent by email or communicated orally in class.

Teaching Assistants (TAs)

TAs are responsible for facilitating learning activities during recitations, holding office hours, marking, and responding to questions from students via email and during office hours and recitations.

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.

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! The test dates are already published, so do not make any plan for travel for these dates. No make-up or earlier test will be allowed for this case. Missing test will result in 0.

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 after consulting with the director.

- 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 phone is allowed on tables**. Please keep them in your bag during the class with sound off.
- Please do not bring food to eat to the classrooms as it is against the GT-Europe regulation. 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

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 Outcomes:

- 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

Campus-Wide Dates

(please check with Registrar for possible updates)

Aug 26 (Wednesday) First day of class

Oct 6 Progress Report

Oct 23 – Nov 01 Fall Break

Dec 7, 8 Final Instructional Class days

Dec 9 Reading Day

Dec 10 - 17 Final Exams Session

TENTATIVE SCHEDULE

Week	Section Coverage in Lecture	Tests	Dates
Week 1 Aug 26, 27, 28	4.8 : Antiderivatives 5.1-2 : Area and Riemann Sum	30 min Prerequisite test During Studio on Thursday	Class on Friday Aug 28 Pretest on Thursday Aug 27
Week 2 Aug 31, Sep 1,2,3	5.3:Definite Integral by Riemann Sum 5.4 : Fundamental Theorem of Calculus		HW 1 Tue Sep 1
Week 3 Sep 7, 8, 9, 10	5.5 : Substitution Method 5.6 : Area between Curves	**Quiz 1** on Sections 4.8, 5.1-5.4	**Quiz 1 on Thu Sep 10** HW 2 Tue Sep 8
Week 4 Sep 14, 15, 16, 17	6.1 : Volume using Cross-sections 6.2 : Volume using Shells		HW 3 Tue Sep 15
Week 5 Sep 21, 22, 23, 24	8.2 : Integration by Parts 8.3 : Trig. Integrals	**Quiz 2** on Sections 5.5-6, 6.1-2	**Quiz 2 on Thu Sep 24** HW 4 Tue Sep 22
Week 6 Sep 28,29,30, Oct1	8.4 : Substitution by Trig Function Review, Exam, Studio	**Mid 1** on 4.8, ch5, ch6, 8.2-3	**Mid 1 on Wed Sep 30** HW 5 Tue Sep 29
Week 7 Oct 5, 6, 7, 8	8.5 : Partial Fractions 4.5 : Limits and L'Hopital's Rule		HW 6 Tue Oct 6
Week 8 Oct 12,13,14,15	8.8 : Improper Integrals 10.1 : Sequences	**Quiz 3** on Sections 8.4-5, 4.5	**Quiz 3 on Thu Oct 15** HW 7 Tue Oct 13
Week 9 Oct 19, 20, 21, 22	10.2 : Infinite Series 10.3 : Integral Test		HW 8 Tue Oct 20
Week 10	Oct 26 – Nov 1	No Class	FALL BREAK
Week 11 Nov 2,3,4,5	10.4 : Comparison Test 10.5 : Ratio Test and Root Test	**Quiz 4** on Sections 8.8, 10.1-3	**Quiz 4 on Thu Nov 5** HW 9 Tue Nov 3
Week 12 Nov 9, 10, 12, 13	10.5 : Ratio Test and Root Test 10.6 : Alternating Series	Nov 11 (Wed) public holiday	HW 10 Tue Nov 10 **Class on Friday Nov 13**
Week 13 Nov 16, 17, 18, 19	10.6 : Alternating Series 10.7 : Power Series	**Mid 2** on 8.4-5,4.5, 8.8, 10.1-5	**Mid 2 on Wed Nov 18** HW 11 Tue Nov 17
Week 14 Nov 23, 24, 25, 26	10.8-9 : Taylor and MacLaurin Series Review, Exam, Studio		HW 12 Tue Nov 24
Week 15 Nov 30, Dec 1,2,3	10.8-9 : Taylor and MacLaurin Series	**Quiz 5** on Sections 10.6-7	**Quiz 5 on Thu Dec 3** HW 13 Tue Dec 1
Week 16 Dec 7, 8	Review for Final Exam	Last instructional Day	HW 14 Tue Dec 8