MATH 2550 Introduction to Multivariable Calculus

GEORGIA TECH EUROPE

COURSE SYLLABUS

Updated on Sep 29 2026

Welcome to Introduction to Multivariable Calculus !

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

Course Description

Course Title: Math 2550, Introduction to Multivariable Calculus

Course Meeting Times: Lectures & Studio : Mon, Tue, Wed 8:30 – 9:20 Yellow Room

Instructor

Instructor: Hyun Jeong KIM **Office**: **303** **E-mail**: hkim3224@gatech.edu

Office Hours:

Textbook

Calculus: Early Transcendentals, 14th ed. by G. B. Thomas Jr. Pearson. ISBN 978-1292253220. A pdf version is posted on our Canvas Site. Select topics from chapter 12, 13, 14 and 15 will be covered.

Prerequisites:

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))

Communication

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

Course Learning Objectives

At the conclusion of this course, it is expected that students will be able to do the following.

- Apply dot and cross products to describe relationships between points, lines, and planes in space.
- Characterize the motion of an object in two/three dimensions using quantities such as arc length and curvature.
- Apply partial derivatives to 1) approximate functions using Taylor's formula, tangent planes, and differentials, and 2) solve unconstrained and constrained optimization problems.
- Construct integrals of functions of several variables in rectangular, cylindrical, spherical, and other coordinate systems, and calculate the value of these integrals.
- Apply multivariable calculus concepts to real-world problems such as optimization and calculating volumes, moments and centers of mass.
- Compose logical progressions of precise statements to justify your reasoning and communicate your mathematical solutions.

Office Hour and Help Desk

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 Help Desk 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. Review worksheet questions done in Studio. Do homework and practice with the rest of the questions on the worksheets. Most importantly, as soon as you find the course a bit challenging, you should use office hours regularly not to get behind.

Assessments

HOMEWORK: Homework will be assigned on-line every week via **Webwork**. Each homework will be due on **Tuesdays** at 11:59 PM (except on week of Easter and it is on Wednesday.) *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 on the WebWork system and on our course Calendar. Each homework is assigned a week earlier and so you have time to finish it earlier if you expect some conflicts on the due date.

c. There are 14 weekly homework of total 134 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 114, capped at 100% (equivalent to 10 pts 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 for both lectures and studios will be recorded and scored on a 0-2.5 scale out of 2 points. The scale is determined as follows: 2.5 points for above 90%, 2 points for above 85%, 1 point for above 80%, 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. Late arrivals and early departure will be noted and three of these will be counted as one absence.

QUIZZES: There will be 5 quizzes of 20 minutes on **Wednesdays**. **One** lowest quiz score will be dropped. Each quiz is graded out of 25 points and the total quiz grade out of 100 consists of four best quizzes, which is 24% of the final grade – see below the distribution table.

MIDTERMS: There will be 2 midterms of 75 minutes on **Tuesdays 8:00 – 9:15am**, Feb 16 and April 6. 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 38% of the final grade - see below the distribution table.

Important : The dates for all the tests 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 due to travels! 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. No earlier or late exam will be allowed for travel plans.

Assessments: Tests will be returned in class and solutions will be posted on Canvas.

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% (possible 0.5pt bonus to total of final grade)	2%
Webwork Homework	5% (possible 1pt bonus to final exam score)	5%
4 best Quizzes	24%	24%
2 Midterms (Better midterm 60% + The other 40%)	31%	38%
Final Exam	38%	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 **Mar 1**. 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.

Re-Scheduled/Missed Exams

NO MAKE-UP EXAMS! All the test dates are already published. No make-up or earlier test will be allowed due to travel. Please do not make any plan for travel for these dates and missing test score will be "0".

- In the case of illness and emergency, please contact me as early as possible.
- 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

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. If you need to leave the class early, please let me know at the beginning of the class.
- 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** with sound off.

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

Verification of Participation (VOP) : Jan 20 – 26

Midterm Progress Reports (MPR) : Mar 1

Final Instructional Class Days : April 26 and 27

Final Exam Period : April 29 – May 6

TENTATIVE SCHEDULE

Week	Section Coverage in Lecture	Tests	Dates to Note
Week 1 **Jan13, 14, 15**	Syllabus, Pretest 12.1-3, WS 12.1-3	Prerequisite test on Wed.	Class on Friday Jan 15
Week 2 **Jan 18 – 21**	12.4, 12.5 12.5, 12.6 WS 12.4, 12.5, 12.6		HW 1 Tue Jan 19
Week 3 **Jan 25 – 28**	13.1-2 13.1-2, WS 13.1-2 WS 13.1-2, Quiz 1	**Quiz 1**	**Quiz 1 on Wed Jan 27** HW 2 Tue Jan 26
Week 4 **Feb. 1 - 4**	13.3-4 13.3-4, 14.1 WS 13.3-4		HW 3 Tue Feb 2
Week 5 **Feb. 8 – 11**	14.1, 14.2 14.2, WS 14.1 WS 14.2, Quiz2	**Quiz 2**	**Quiz 2 on Wed Feb 10** HW 4 Tue Feb 9
Week 6 **Feb. 15 – 18**	Review Mid 1 14.3	**Mid 1**	**Mid 1 on Tue Feb 16** HW 5 Tue Feb 16
Week 7 **Feb. 22 -- 25**	14.4, WS 14.3 14.5 WS 14.4, WS 14.5		HW 6 Tue Feb 23
Week 8 **Mar 1-5**		**SPRING BREAK**	
Week 9 **Mar 8-11**	14.6 14.7 WS 14.6, Quiz 3	**Quiz 3**	**Quiz 3 on Wed Mar 10** HW 7 Tue Mar 9
Week 10 **Mar 15-18**	14.7 14.8 WS 14.7, WS 14.8		HW 8 Tue Mar 16
Week 11 **Mar 22-25**	15.1-3 15.1-3, WS 15.1-3 WS 15.1-3, Quiz 4	**Quiz 4**	**Quiz 4 on Wed Mar 24** HW 9 Tue Mar 23
Week 12 **Mar 30 – Apr 2**	15.4 15.4, 15.5 WS 15.4	Mar 29 (Monday) Easter Holiday	HW 10 Tue Mar 31 **Class on Friday April 2**
Week 13 **Apr 5-8**	Review Mid 2 15.5, WS 15.5	**Mid 2**	**Mid 2 on Tue April 6** HW 11 Tue April 6
Week 14 **Apr 12-15**	15.7 15.7 WS 15.7, Quiz 5		HW 12 Tue April 13
Week 15 **Apr 19-22**	15.8 15.8, WS 15.7 WS 15.8	**Quiz 5**	**Quiz 5 on Wed April 21** HW 13 Tue April 20
Week 16 **Apr26, 27**	Review for Final Review for Final	Last instructional Day	HW 14 Tue April 27

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