

COURSE SYLLABUS, SECTIONS D1-D3

Welcome to Integral Calculus! This course is designed to introduce you to the fundamental concepts of integration and infinite series. All of our students play an important role in our educational mission. We hope that you will find this to be a useful, fundamental course for your future studies.

Instructor and Contact Information

Instructor: Klara Grodzinsky

Office: Skiles 232, 404-894-4397 (or leave a message at 404-894-2700)

Office Hours: Tuesdays, 12:45-2:30 pm; Wednesdays, 8:15-9:00 am; and by appointment

E-mail: klara.grodzinsky@math.gatech.edu

Course Websites

Instructor's Web Page: <http://people.math.gatech.edu/~klarag>

Course Information: t-square.gatech.edu (required)

Textbook/Homework Access: <http://www.mymathlab.com> (required)

Learning Catalytics: <https://learningcatalytics.com> (required)

On-line Discussions: www.piazza.com (highly recommended)

Course Description and Learning Outcomes

Course Title: Integral Calculus

Course Meeting Times: Lecture meets Tuesdays and Thursdays from 9:35-10:55 am in Physics L2.

Recitations meet on Mondays and Wednesdays from 9:05-9:55 am (see locations below).

Teaching Assistants, Office Hours, and Meeting Locations:

Section/TA	Email Address	Recitation Location	Office Hours
D1: Ziyi Zhou	zzhou315@gatech.edu	CoC 53	Wed 2:35-3:35 pm, Skiles 230
D2: Qianli Hu	qhu33@math.gatech.edu	CoC 52	MW 10-11, Skiles 153
D3: Alejandro Da Silva	ajds3@gatech.edu	ESM 202	Fridays 9-10 am, Skiles 230

Textbook: Thomas, *Calculus: Early Transcendentals*, 13th ed. We will discuss topics in chapters 5-10.

MyMathLab Course Information: We will be utilizing MyMathLab (MML) for homework through a joint code for the Thomas *Calculus* text and the Lay *Linear Algebra* text. In order to register, you will need our course id listed below.

MyMathLab Course ID: grodzinsky21503

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.
- 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 send an email to gatechmath@yahoo.com and include the following information:

- 1 Your First and Last Name
- 2 The email address used to register for MML
- 3 Your Login ID for MML
- 4 Our course ID (listed above)

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. Please refer to the registration document, located in the “Resources” section on t-square, to create your new account.

When signing up for MyMathLab, it will be immensely helpful to me (for grading purposes) if you will set your STUDENT ID to your USERID for the GT system (i.e., your T-square USERID, as in “gburdell3”, etc).

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 and/or Lay textbook(s) that is less expensive than purchasing the text(s) 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.

At the conclusion of Integral Calculus, it is expected that:

- Students have mastered basic Calculus concepts, including integration, convergence of integrals and infinite series, and Taylor’s theorem.
- Knowledge of the above concepts can be exhibited algebraically and geometrically.
- Calculus concepts can be used to solve applied physics, geometry, and numerical approximation problems.
- Students understand the usage of proper mathematical notation in relation to the above topics.

Course Organization

This course will consist of lectures and recitations, each meeting twice per week. You are required to attend all scheduled sessions at all times. The Center for Academic Success will also provide our class with a PLUS (“Peer Led Undergraduate Study”) leader. PLUS sessions will also meet twice per week. These sessions are optional, but strongly encouraged.

Course Requirements and Grading

HOMEWORK: Homework will be assigned on-line and will consist of exercise problems on MyMathLab. You are expected to understand **all** homework problems for the tests and quizzes. In order to increase the effectiveness of recitation, you should attempt the problems **before** the weekly recitation sections. Exercises on MyMathLab will be due every Monday at 11:59 PM (except during class recesses or as announced in class). Each assignment contains problems that count toward the grade, and extra practice problems to help you prepare for the quizzes and tests. The lowest homework grade will be dropped. **Late homework will be accepted with a 20% deduction per day.** Please note: *the final graded homework assignment will be due*

on Monday, November 28.

PARTICIPATION: Class participation will be based on your attendance in the lectures. We will use Learning Catalytics (learningcatalytics.com) to measure lecture attendance, beginning on the second week of classes. Learning Catalytics is free with your subscription to MyMathLab. You will need to bring an internet capable device (smart phone, tablet, laptop, etc) to class each day in order to access the questions. Class attendance will count as one quiz grade at the end of the term. *This grade cannot be dropped.*

RECITATIONS: Recitations will be run in a partially “flipped” classroom environment. That means: the TAs will expect that you have attended lecture and reviewed the textbook before class, and they will not lecture on the course material. Instead, you will spend the recitation time working on practice problems. Your TA will measure participation through attendance and effort during the recitation sessions. The TAs will assign each student a score from 0-2 at the end of the term, which will be added onto the final class average (affecting all “borderline” grades).

QUIZZES: A weekly quiz will be given each Wednesday, with the exception of the first week of class and testing weeks. Quizzes will be given during the first 15 minutes of recitation. The lowest quiz grade will be dropped (with the exception of the participation grade).

TESTS: We will have three midterm exams during the term. Tests will be administered during the full 50 minutes of the recitation period on the following days:

- **Test 1: Wednesday, September 21**
- **Test 2: Wednesday, October 19**
- **Test 3: Monday, November 21**

No books, notes, calculators, cell phones, or other electronic devices are allowed during the tests and quizzes. Showing work is required on all written assessments. As writing mathematics properly is part of learning Calculus, points may be deducted for incorrect mathematical notation.

FINAL EXAM: The final exam will cover all course materials and will be administered on **Thursday, December 8**, from 2:50-5:40 pm. All students must take the final examination.

Your final average will be computed as follows:

	<i>Option 1</i>	<i>Option 2—Halve lowest test</i>
Homework	8%	8%
Quizzes + Participation	20%	20%
Tests (14% each)	42%	35%
Final Exam	30%	37%
Recitation	Up to 2% extra	Up to 2% extra

In all cases, you will receive the higher of the average options.

Letter grades will be determined based on the following intervals. You are guaranteed a minimum of the following scale, but do not expect any deviation:

A: 90% and higher, B: [80%, 90%), C: [70%, 80%), D: [60%, 70%), F: [0%, 60%).

Midterm grades will be assigned on **September 30**. A satisfactory grade will be assigned to all students with a midterm average of 70% or higher (based on the above weighting of grades).

Class Policies

Attendance: You are expected to come prepared and actively participate in every lecture and recitation session. Attendance in lecture will be taken by use of Learning Catalytics. 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 and/or loss of participation points for that day.

Please show courtesy to your fellow classmates and instructor by adhering to the following class rules:

- Turn off all laptops, cellular phones, i-pods and other electronic devices, unless you have a *documented* need to use such devices for note-taking, during class.
- Come to class on time and stay for the entire class period.
- Refrain from conversing with your fellow students.
- Put away any reading materials unrelated to the course.

Please note: Ms. Grodzinsky will be out of the office on October 4, 18, and 25. On these dates, arrangements will be made to cover the class lectures and you will still be responsible for the material covered during class.

Academic Dishonesty: All students are expected to comply with the Georgia Tech Honor Code (the honor code can be found at <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:

- Using an unapproved calculator, books, or any form of notes on tests.
- Copying directly from **any** source, including friends, classmates, tutors, internet sources (including Wolfram Alpha), or a solutions manual.
- Allowing another person to copy your work.
- Taking a test or quiz in someone else's name, or having someone else take a test or quiz in your name.
- Asking for a regrade of a paper that has been altered from its original form.
- Using someone else's account to gain attendance or homework points for them, or asking someone else to use your account for any graded homework or attendance submission.

Regrading of Papers: If a problem on your test has been graded in error, you must submit a regrade request to me (not your TA!) **in writing**, along with your paper, no more than *one week* after the tests have been returned in class. Should you wish to have your paper regraded, *do not change or add to the work on your paper!* If you must write on your returned paper, be sure to write in a different color ink and clearly indicate what you have added. A regrade request can only be submitted if you have done something **CORRECT** on your test that has been marked as incorrect. You **MUST** check your answers with the solutions **BEFORE** submitting such a request.

Make-Ups: In an emergency situation, I may allow a make-up test if I am notified prior to the exam and provided with a reasonable, **written** confirmation of your absence. Any make-ups must be completed before the corresponding test has been graded and returned to other students. If you will miss a test due to a university-sponsored event or athletics, please provide me with the official documentation in advance.

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>. Please also make an appointment with me to discuss your accommodation, if necessary.

Calculators: While you may need a calculator for help with some of the homework problems, the use of calculators is NOT ALLOWED on in-class assessments.

Announcements: I will frequently update the class pages with class information and materials. *You are responsible for obtaining any announcements or materials placed on my web page* (<http://people.math.gatech.edu/~klarag>), MyMathLab (www.mymathlab.com), or T-square (t-square.gatech.edu). Though not required, it is also to your advantage to join our class page on Piazza (www.piazza.com) so you can view/participate in course-related discussions.

Additional Help: *Asking questions is a key to success!* Please stop by my office hours or your TA's office hours whenever you have questions. Free help is also available Monday-Thursday afternoons in the Math Lab, located on the second floor of Clough Commons.

Please note: *items on the syllabus and course schedule are subject to change. Any changes to the syllabus and/or course schedule will be relayed to the students in class and through e-mail.*

Important Dates Throughout the Term

22 August – First Day of Classes

5 September – Labor Day (No Class)

21 September – Test #1

30 September – Progress Reports Due

10-11 October – Fall Recess (No Class)

19 October – Test #2

29 October – Last day to withdraw with a grade of "W"

21 November – Test #3

23-25 November – Thanksgiving Break (No Class)

6 December – Last Day of Classes

8 December – Final Exam

Tentative Course Schedule

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

<i>Week and Dates</i>	<i>Section Coverage</i>	<i>Topics</i>
Week 1 August 22-26	Chapter 3 Section 4.8 Section 5.1	Review of Differentiation Review of Anti-derivatives Area under the curve
Week 2 August 29-September 2	Sections 5.2-5.3 Section 8.7	Sigma Notation and The Definite Integral Numerical Integration <i>Quiz #1</i>
Week 3 September 6-9	Sections 5.4-5.6	The Fundamental Theorem of Calculus Integration by Substitution <i>Quiz #2</i>
Week 4 September 12-16	Section 5.6 Sections 7.1-7.2	Area Between Curves Logs, Exponentials and Separable DEQs <i>Quiz #3</i>
Week 5 September 19-23	Sections 8.2-8.3	Integration by Parts Integration of Products and Powers of Trig Functions <i>Test #1 (Chapters 5 & 7)</i>
Week 6 September 26-30	Sections 8.4-8.5	Trig Substitutions and Partial Fractions <i>Quiz #4</i>
Week 7 October 3-7	Section 8.5 Section 4.5	Partial Fractions (continued) L'Hopital's Rule <i>Quiz #5</i>
Week 8 October 12-14	Section 8.8	Improper Integrals
Week 9 October 17-21	Sections 10.1-10.2	Infinite Sequences and Series <i>Test #2 (Chapter 8)</i>
Week 10 October 24-28	Section 10.3, 10.4	Integral Test, Comparison Tests <i>Quiz #6</i>
Week 11 October 31-November 4	Sections 10.5, 10.6	Ratio and Root Tests, Alternating Series <i>Quiz #7</i>
Week 12 November 7-11	Sections 10.7, 10.8	Power series and Taylor Series <i>Quiz #8</i>
Week 13 November 14-18	Sections 10.8, 10.9	Taylor and MacLaurin Series <i>Quiz #9</i>
Week 14 November 21-23	Section 6.1	Volumes by Disks <i>Test #3 (Chapter 10)</i>
Week 15 November 28-December 2	Sections 6.2, 6.5	Volumes by Shells Work <i>Quiz #10</i>
Week 16 December 5-6		Review for Final Exam