CALCULUS II (MATH 1360)

Dates: June 2 - July 3, 2025

Class Meeting Times: Mon, Tue, Wed, Thur 10:45 am – 1:25 pm

Location: ICC (Intercultural Center) 213

Professor: Zhe Liu

Professor Contact Information: zl602@georgetown.edu

COURSE DESCRIPTION

MATH-1360 is the continuation of MATH-1350 (Calculus I). Topics include applications of the definite integral, techniques of integration, infinite sequences and series including power series and Taylor series, and parametric and polar curves. We will explore these topics from both a computational and conceptual perspective. Calculus is essential for mathematics, sciences and many other fields. This course together with other courses in the calculus sequence will help you master the powerful tools for problem solving that calculus affords. We hope that you will enjoy this course and find it interesting and useful!

PREREQUISITE

MATH-1350 or equivalent

TEXTBOOK

Calculus: Early Transcendentals, Single Variable, 3rd Ed. with MyLab by Briggs, Cochran, Gillett, and Schulz.

MyLab will be used for various learning and assessment purposes and it comes with access to the eTextbook for this course. We recommend you purchase the course materials through GU Bookstore (Order in store or online at https://georgetown.bncollege.com.) If you are unsure about whether you wish to take this course, you can obtain a 14-day free trial of MyLab from the publisher Pearson before you need to purchase anything. (If the MyLab access code you purchased for MATH-1350 is still valid, you may keep using it.)

COURSE LEARNING OBJECTIVES

For the General Curriculum, at the successful completion of this course the student will demonstrate the following student learning outcomes: mathematical communication skills, quantitative reasoning skills, and critical thinking and problem-solving skills. Specifically, at the successful completion of MATH-1360, students will be able to:

- Interpret areas between curves, volumes of solids of revolution, and lengths of curves as definite integrals and compute the values.
- Recognize and implement appropriate techniques (substitution, integration by parts, trigonometric integrals, trigonometric substitution, and integration by partial fractions) to evaluate indefinite and definite integrals.
- Identify and evaluate improper integrals.
- Understand definitions and properties of infinite sequences and series.
- Choose and apply various tests (divergence test, integral test, comparison tests, alternating series test, ratio and root tests) to determine the convergence or divergence of infinite series. Determine the radius and interval of convergence for a given power series.
- Find Taylor polynomials and Taylor series for a variety of functions, and use them to approximate function values.
- Describe curves and regions in the plane using parametric and polar representations.
- Write basic mathematical arguments that apply some of the major definitions and theorems of calculus.

GRADING SCHEME

Homework	15%
Quizzes	20%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Participation	5%

		A	93-100%	A-	90-92%
B+	87-89%	B	83-86%	B-	80-82%
C+	77-79%	C	73-76%	C-	70-72%
D+	67-69%	D	60-66%	F	Below 60%

COURSE ASSIGNMENTS

Homework: Homework assignments will be completed via MyLab online (through Canvas). Problems assigned will consist of routine exercises as well as problems that push you to think about and work with the underlying concepts at a deeper level. Your lowest homework score will be dropped.

Quizzes: After 2-3 homework assignments, there will be a take-home quiz based on the material covered in these assignments. Each quiz will consist of 2-3 free-response questions, and it will be available on Gradescope (through Canvas) with a 40-minute time limit. There will be no makeup quizzes. Your lowest quiz score will be dropped.

Exams: There will be three exams, taken during class time. These tests will cover the material from the previous 1.5-2 weeks. Makeup exams will be given only under extraordinary circumstances (e.g. medical emergency). Written request must be made as early as possible with supporting documentation provided.

COURSE SCHEDULE

Week 1: Applications of Integration.

Week 2: Techniques of Integration.

Week 3: Sequences and Infinite Series.

Week 4: Sequences and Infinite Series; Power Series.

Week 5: Parametric and Polar Curves.

COURSE POLICIES AND EXPECTATIONS

Participation and Workload: Regular participation and attendance are essential for success in this course. For every hour in class, you should expect to spend at least two hours outside of class on work for this course (reading the textbook, reviewing material from lecture, filling in gaps, doing homework problems). This course is fast-paced; if you get too far behind, it will be difficult to catch-up, so set aside enough time in your schedule to allow you to keep up with your reading, study, and homework.

Other important reminders: Please arrive to class on time, keep phones silent and out of sight during class. Tablets and laptops are allowed in class for note-taking only. Behavior(s) such as reading/sending email, posting to social media, playing games, etc. is always inappropriate and not allowed. It is important that you set up Notifications on Canvas to receive all course announcements and due date changes.

SEEKING HELP

Office Hours: Office hours is one of the most useful resources available to students. Using office hours effectively benefits students in multiple ways, from clarifying course content to receiving general academic advising. Throughout the summer session, I will hold in-person as well as online office hours (no appointment needed). Additional office hours are available by request.

Email Communication: Please feel free to email me with your questions, concerns, and/or to schedule a time to meet (in person or over Zoom). Please use either Georgetown email or Canvas email system.

ACCOMMODATIONS

Georgetown University is committed to showing care and concern for each student by creating an inclusive and accessible learning environment to meet the needs of its diverse student body. Please feel free to contact/visit the Academic Resource Center for more information and resources regarding academic support and accommodations (https://academicsupport.georgetown.edu). Any information you provide will be treated as private and confidential.

ACADEMIC INTEGRITY

All students will be required to make the Georgetown University Honor Pledge: *In pursuit of the high ideals and rigorous standards of academic life, I commit myself to respect and to uphold the Georgetown University honor system: to be honest in every academic endeavor, and to conduct myself honorably, as a responsible member of the Georgetown community as we live and work together.* All students are expected to follow Georgetown's honor code unconditionally. If you have not done so, please read the honor code material located online at the Honor Council website: https://honorcouncil.georgetown.edu. Students are expected to work with integrity and honesty in all their assignments. Cheating on a test or quiz will result in your receiving a grade of zero on the test or quiz. Repeated cheating will result in your failing the course.

SUPPORT SERVICES

Title IX at GU: Title IX of the Education Amendments of 1972 ("Title IX") prohibits discrimination based on sex in any educational programs, which includes sexual harassment or any acts of sexual misconduct. Title IX requires the University, upon becoming aware of any incident of sexual harassment and misconduct to respond appropriately to protect and maintain the safety of the University community, including students, faculty, and staff. Please visit Title IX at Georgetown University https://titleix.georgetown.edu for more information.

Technical Support: All students have access to Canvas technical support 24 hours a day, 7 days a week, including live chat and a support hotline at 855-338-2770. Use the 'Help' icon in the lower left of your Canvas window to view all available support and feedback options. If you're looking for help on a specific feature, check out the Canvas Student Guide.

eResources: Students enrolled in courses have access to the University Library System's eResources, including 500+ research databases, 1.5+ million ebooks, and thousands of periodicals and other multimedia files. You can access these resources through the Library's Homepage by using your NetID and password.

More Support Services: Georgetown University offers a variety of support services for students. Below are some additional resources available to you:
- University Information Services (UIS) https://uis.georgetown.edu
- Division of Student Affairs https://studentaffairs.georgetown.edu
- Student Health Services https://studenthealth.georgetown.edu