Integral Calculus

Last Updated: Wed, 07/30/2025

Course prefix: MATH

Course number: 1552

Section: E

CRN (you may add up to five):
84268

Instructor First Name: Klara

Instructor Last Name: Grodzinsky

Semester: Fall

Academic year: 2025

Course description:

Definite and indefinite integrals, techniques of integration, improper integrals, infinite series, applications.

Course learning outcomes:

- 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.

Required course materials:

Canvas access is required. Textbook purchase is optional.

Grading policy:

Homework Packets: 15%

Exams: 85% total weight, broken down as:

- Midterms 1, 2, and the Integration Portion of the Final: Best 2 of the 3 grades count 18% each
- Midterms 3, 4, and the Series Portion of the Final: Best 2 of the 3 grades count 18% each
- Total Final Exam score counts 13%

Attendance policy:

You are expected to come prepared and actively participate in the class sessions. 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 or teaching assistant by adhering to the following class rules:

- Turn off all laptops, cellular phones, 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.

Seating in our classrooms is limited. As space must be guaranteed for all registered students, please do not attend a lecture or studio section for which you are not registered. The instructors and TAs reserve the right to remove unregistered students from their classrooms.

To encourage class attendance and help students improve their overall grades, lecture material is included in the weekly homework packets. We strongly encourage you to regularly attend class lectures. Students can increase the final average by up to 2% by attending and participating in the studio sessions.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

While students may collaborate on the weekly homework problems, any work turned in must be submitted individually by each student. Copying directly from classmates is not allowed. No collaboration of any kind, whether verbal, non-verbal, electronic or in-person, will be permitted on the exams.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the Mathematics 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 measure the world?

Completion of this course should enable students to meet the following Learning Outcome:

Students will apply mathematical and computational knowledge to interpret, evaluate, and communicate quantitative information using verbal, numerical, graphical, or symbolic forms.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

Information Literacy

Inquiry and Analysis

Problem-Solving