

MATH 31 Calculus II

Course Code: MATH 31

Instructor: Professor Vadim Olshevsky

Home Institution: University of Connecticut

Office Hours: TBA and By Appointment

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Credit: 4

Course Description:

Calculus 2 is the second of a sequence of three courses in calculus covering basic concepts of calculus. The course covers integration techniques, applications of integrals, basic differential equations, sequences, and power series.

Prerequisite:

MATH 30 or appropriate high school based AP credit.

Required Textbooks:

Calculus: Early Transcendentals, 8th Edition, by James Stewart with WebAssign Access Code.
Can be purchased directly at

<https://www.cengage.com/c/calculus-early-transcendentals-8e-stewart/9781337771498#compare-buying-options>

It is important that you purchase both the textbook and the WebAssign code, the latter is necessary for the homework assignments.

Homework: There will be online WebAssign homework assignments for each section of the text. Each assignment will be made available on several days before the section is covered in class. The due date for each assignment will be set by your instructor and will generally be two or three days after the material is covered in class. You will get five attempts for each question.

Course Objectives:

The objective of the course is to build an understanding of the fundamental principles and applications of integral calculus through lectures, homework, discussions, quizzes and exams.

Course Schedule

Week1 *Integration:* Anti-derivative, indefinite integrals, approximating areas, definite integrals, Fundamental Theorem of Calculus, integration formulas, substitutions, integration of logarithmic and exponential functions. Integration by parts.

Week2 *Integration:* Trigonometric integrals and substitutions, integrating rational functions, other strategies, improper integrals.

Week3 *Applications of integration:* Arc length and surface area of revolution, parametric curves, areas and length in polar coordinates, work, moment, center of mass, ordinary differential equations (basic concepts, direction fields, separable equations)

Week4 *Applications of integration:* conic sections, exponential growth and decay, the logistic equation. *Sequences and series:* Sequences, infinite series, comparison and limit comparison test, divergence and integral tests, alternating series and absolute convergence, power series, Taylor and Mackaurin series, applications of Taylor polynomials.

Grading & Evaluation:

Examinations: There will be two midterm exams plus one cumulative final exam. The exams will contain problems to solve and definitions, brief explanations of concepts, and simple proofs.

Letter Grade Assignment

Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

Letter Grade	Percentage	Performance
A	93-100%	Excellent Work
A-	90-92%	Nearly Excellent Work
B+	87-89%	Very Good Work
B	83-86%	Good Work

Letter Grade	Percentage	Performance
B-	80-82%	Mostly Good Work
C+	77-79%	Above Average Work
C	73-76%	Average Work
C-	70-72%	Mostly Average Work
D+	67-69%	Below Average Work
D	60-66%	Poor Work
F	0-59%	Failing Work

Course Policies

Attend Class

Students are expected to attend all class sessions as listed on the course calendar.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider disenrolling from a course. Refer to the Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Commit to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

Academic Honesty Policy & Procedures

"The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. University expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades."

Definitions

“**Cheating** is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means.”

“**Plagiarism** is a form of cheating.”

“Plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person’s contribution.”