



MAT 126 Single Variable Calculus

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

This course provides an in-depth exploration of single-variable calculus, a fundamental branch of mathematics essential for understanding rates of change and accumulation. Students will delve into the principles of limits, functions, derivatives, and integrals, gaining proficiency in applying these concepts to solve real-world problems. Through a combination of theoretical study and practical applications, participants will develop a solid foundation in calculus, preparing them for advanced mathematical coursework and applications in various fields.

Upon Completion of this Course, students will be able to:

1. Demonstrate a comprehensive understanding of the fundamental concepts of single-variable calculus, including limits, continuity, derivatives, and integrals;
2. Interpret and analyze graphs and visual representations of functions and their derivatives, enhancing the ability to visualize mathematical concepts;
3. Formulate and analyze mathematical models that represent real-world situations, demonstrating the practical applications of calculus;
4. Apply calculus techniques to solve a variety of mathematical problems, including rates of change, optimization, and accumulation.

PREREQUISITES

None

GRADING

Grades will be determined by accumulating points, with 100 points being the



maximum, as follows:

ITEM	POINTS
2 Assignments	20 Points
2 Quizzes	20 Points
Midterm Exam	25 Points
Final Exam	35 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Calculus (8th edition) by James Stewart, Brooks/Cole Publishers.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	<p>Topics: Topic 1: Analytic Geometry Topic 2: Limits Topic 3: The Derivative Function Topic 4: Rules for Finding Derivatives</p> <p>Assessments: Assignment #1</p>
Module 2	<p>Topics: Topic 5: Trigonometric Functions Topic 6: Exponential and Logarithmic functions Topic 7: Inverse Trigonometric Functions Topic 8: Hyperbolic Functions</p> <p>Assessments:</p>



	Quiz #1
Module 3	Topics: Topic 9: Curve Sketching Topic 10: Optimization Topic 11: Linear Approximations Topic 12: The Mean Value Theorem Assessments: Assignment #2 Midterm Exam
Module 4	Topics: Topic 13: Integration Topic 14: Techniques of Integration Topic 15: Distance, Velocity, Acceleration Topic 16: Volume Assessments: Quiz #2
Module 5	Topics: Topic 17: Polar Coordinates Topic 18: Parametric Equations Topic 19: Sequences and Series Topic 20: Taylor's Theorem Assessments: Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.



LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:



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Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.