



蘇州大學  
Soochow University

# MAT 190 Calculus and Analytic Geometry II

Summer 2024

**Course Credits:** 4

**Contact Hours:** 56 hours

**Instructor:** TBA

**Email:**TBA

## **COURSE OBJECTIVES**

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Building upon the foundation established in Calculus I, MAT 190 is a comprehensive course that delves deeper into calculus and analytic geometry. This course explores advanced topics such as integrals, exponential and logarithm function, trigonometric function, power series, polar coordinates, and parametric equations. Aiming to equip students with the skills and knowledge necessary for success in subsequent mathematical endeavors, students will emerge with a heightened appreciation for the power and versatility of calculus.

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

1. Develop a deep understanding of advanced calculus concepts.
2. Master the use of polar coordinates and parametric equations for mathematical modeling.
3. Communicate mathematical ideas verbally in their discussion sessions.
4. Enhance problem-solving skills through practical applications of integration techniques.
5. Cultivate critical thinking skills in analyzing and interpreting solutions to complex problems.

## **PREREQUISITES**

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MAT 180 Calculus and Analytic Geometry I



## GRADING

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Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
2 Quizzes	20 Points
Research Paper	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

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### Required Texts:

Simmons, George F, *Calculus with Analytic Geometry*, 2<sup>nd</sup> Edition, McGraw-Hill Education.

### Recommended (Optional) Texts or Other Materials:

None

## COURSE TOPICS

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MODULE	TASKS
Module 1	<b>Topics:</b> Topic 1: Numbers Function and Graphs Topic 2: The Derivative of A Function Topic 3: The Computation of Derivatives Topic 4: Applications of of Derivatives <b>Assessments:</b> Quiz#1



Module 2	<b>Topics:</b> Topic 5: Indefinite Integrals and differential Equations Topic 6: Definite Integrals Topic 7: Applications of Integration Topic 8: Exponential and Logarithm Function <b>Assessments:</b> Quiz#2
Module 3	<b>Topics:</b> Topic 9: Trigonometric Function Topic 10: Methods of Integration Topic 11: Future Applications of Integration Topic 12: Indeterminate Forms and Improper Integrals <b>Assessments:</b> Midterm Exam
Module 4	<b>Topics:</b> Topic 13: Infinite Series Constants Topic 14: Power Series Topic 15: Conic Sections Topic 16: Parametric Equations <b>Assessments:</b> Research Paper
Module 5	<b>Topics:</b> Topic 17: Vectors in Three-Dimensional Space Topic 18: Partial Derivatives Topic 19: Multiple Integrals Topic 20: Green's Theorem; Gauss's Theorem and Stokes' Theorem <b>Assessments:</b> 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**

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- 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**

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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**

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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**

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Soochow University is committed to maintaining a barrier-free environment so that



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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:

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.