



蘇州大學
Soochow University

MAT 113 Mathematics I

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email:TBA

COURSE OBJECTIVES

This course is an introductory-level mathematics course designed to develop students' understanding and proficiency in fundamental mathematical concepts. The course covers topics such as functions, graphs algebra, triangles, geometry, trigonometry, quadratic equations and calculus. Through lectures, problem-solving exercises, and practical applications, students will develop essential mathematical skills and problem-solving strategies.

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

1. Demonstrate proficiency in fundamental algebraic operations and equations
2. Understand and apply basic concepts of calculus, including limits and derivatives
3. Solve basic problems involving calculus, such as limits, derivatives, and applications of derivatives
4. Analyze and graph functions, including linear, quadratic, exponential, and logarithmic functions
5. Apply mathematical reasoning and critical thinking skills to solve mathematical problems

PREREQUISITES

N/A

GRADING

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



maximum, as follows:

ITEM	POINTS
Labs	40 Points
Midterm 1	15 Points
Midterm 2	15 Points
Quizzes	10 Points
Final Exam	20 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:

Harley Flanders; Justin J. Price, *Introductory College Mathematics with Linear Algebra and Finite Mathematics*, Academic Press.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	Topics: Topic 1: Functions and Graphs Topic 2: Real Numbers Topic 3: Linear and Quadratic Functions Topic 4: Polynomial Functions Assessments: Quiz#1 Lab#1: Explore transformations of functions by manipulating parameters



Module 2	Topics: Topic 5: Zeros And Roots Topic 6: Rational Functions Topic 7: Exponential And Logarithm Functions Topic 8: Trigonometric Functions Assessments: Quiz#2 Lab#2: Use graphing software to create visualizations of various types of functions
Module 3	Topics: Topic 9: Sine And Cosine Topic 10: Identities and Inverse Functions Topic 11: Trigonometry Topic 12: Right Triangles Assessments: Midterm#1 Lab#3: Elevation and depression
Module 4	Topics: Topic 13: Oblique Triangles Topic 14: Vectors Topic 15: Analytic Geometry Topic 16: Vectors and Matrices Assessments: Midterm#2 Lab#4: Measure the heights of objects using trigonometry and shadow lengths
Module 5	Topics: Topic 17: Geometry of Space Topic 18: Linear Transformations Topic 19: Complex Numbers Topic 20: Finite Mathematics 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.



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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:

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.