MAT 120 Calculus II

Summer 2024

Course Credits: 4
Contact Hours: 56 hours
Instructor: TBA
Email:TBA

COURSE OBJECTIVES

This course is intended as the second part of a sequence that begins with Calculus I. It covers advanced applications and techniques of integration, differential equations, sequences and series, parametric equations and polar coordinates, vectors and the geometry of space, and partial derivatives.

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

1. Use integration to compute areas, volumes, arc lengths and surface areas;
2. Expand their knowledge of differentiation and integration techniques to include integration by Parts and Improper Integrals;
3. Apply right tests or techniques to the question of convergence or divergence of an infinite series;
4. Find Taylor Series and their intervals of convergence;
5. Determine convergence or divergence of numerical sequences and series by applying appropriate convergence tests.

PREREQUISITES

MAT 110 Calculus I

GRADING

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

ITEM	POINTS

4 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:

George B. Thomas Jr.,Maurice D. Weir,Joel R. Hass. Thomas, ***Calculus: Early Transcendentals,*** Pearson, 13th edition, 2015.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	**Topics:** Topic 1: The Logarithm Defined as an Integral Topic 2: Exponential Change and Separable Differential Equations Topic 3: Hyperbolic Functions Topic 4: Relative Rates of Growth 4 **Assessments:** Assignment #1
Module 2	**Topics:** Topic 5: Integration by Parts Topic 6: Trigonometric Integrals Topic 7: Trigonometric Substitutions Topic 8: Integration of Rational Functions by Partial Fractions **Assessments:** Assignment #2 Quiz #1

Module 3	**Topics:** Topic 9: First-Order Linear Equations Topic 10: Systems of Equations and Phase Planes Topic 11: Sequences Topic 12: Infinite Series **Assessments:** Assignment #3 Midterm Exam
Module 4	**Topics:** Topic 13: The Integral Test/Comparison Tests Topic 14: Absolute Convergence; The Ratio and Root Tests Topic 15: Power Series Topic 16: Taylor and Maclaurin Series **Assessments:** Assignment #4 Quiz #2
Module 5	**Topics:** Topic 17: Parametrizations of Plane Curves Topic 18: Polar Coordinates Topic 19: Vectors and the Geometry of Space Topic 20: Partial Derivatives **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).

ACEDEMIC 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:

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.