0701M110
Calculus I

Instructor: TBA

Time: Monday through Friday (June 30, 2025-August 1, 2025)

Office Hours: 2 hours (according to the teaching schedule)

Contact Hours: 60 (50 minutes each)

Credits:4

E-mail: TBA

Course Description

This course is the first part of a traditional two semester long sequence with a focus on differentiation. It will cover single variable differential calculus and its applications.

Required Textbook(s)

"Calculus: Early Transcendentals", 10th edition by Anton, Bivens and David.

Coverage: Chapters 1-5, Select Sections

Calculators: No calculators may be used on tests. Cell phones must be turned off and put away during tests.

Prerequisites

Students are assumed to have taken and passed a pre-calculus course. In particular, students should be proficient in high school algebra and geometry, as well as

trigonometry. Moreover, they should have studied exponential and logarithmic functions.

Course Hours

The course has 25 sessions in total. Each class session is 120 minutes in length. The course meets from Monday to Friday.

Course Schedule

Please note that the schedule is meant to give an overview of the major concepts this course. Changes may occur in this calendar as needed to aid in the student's development.

Week 1

- 1.1 Limits (Intuitive)
- 1.2 Computing Limits
- 1.3 More Limits
- 1.5 Continuity
- 1.6 Trig, Exponential and Inverse Continuity
- 2.1 Tangent Lines, Rates of Change
- 2.2 Derivative Function
- 2.3 Differentiation Techniques
- ***Exam 1***

Week 2

- 2.4 Product and Quotient Rules
- 2.5 Trig Function Derivatives
- 2.6 Chain Rule
- 3.1 Implicit Differentiation
- 3.2 Log Function Derivatives
- 3.3 Exponential and Inverse Trig Derivatives

- 3.4 Related Rates

- 3.5 Local Linear Approximation

- *Exam 2*

Week 3

- 3.6 L'Hopital's Rule, Indeterminate Forms

- 4.1 Increasing and Decreasing Functions

- 4.2 Relative Extrema, Graphing Polynomials

- 4.3 Rational Functions, Cusps, Tangents

- 4.4 Absolute Max/Min Problems

- 4.5 Applied Max/Min Problems

- 4.6 Rectilinear Motion

- 4.7 Newton's Method

- *Exam 3*

Week 4

- 4.8 Rolle's Theorem, Mean-Value Theorem

- 5.1 Area Problem

- 5.2 Indefinite Integral

- 5.3 Integration by Substitution

- 5.4 Area as Limit, Sigma Notation

- 5.5 Definite Integral

- 5.6 Fundamental Theorem of calculus

- *Exam 4*

Week 5

- 5.7 Rectilinear Motion

- 5.8 Average Value of a Function

- 5.9 Definite Integrals and Substitution

- 5.10 Functions Defined by Integrals

- Review
- ***Final Exam***

Grading Policy

Homework, Attendance and In-class work	15%
Midterm exams	60% (15% each)
Final Exam	25%
Total	**100%**

Homework:

There will be regular homework assignments. Students are encouraged to work together on the homework problems, but the homework will not be graded. However it is very important to do all the homework

Attendance and in-class work:

Students are expected to be in class every day for the full class period. Material will be covered very quickly; it will be difficult to catch up, should one fall behind. We will spend some time in class working on problems in groups. Some of this work may be presented or turned in.

Exams:

There will be four exams and a comprehensive final exam.

Grading Scale

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90~100
Good	B	80~89
Satisfactory	C	70~79

Poor	D	60~69
Failed	E	Below 60

Attendance

Attendance is mandatory in the class. It would be recorded each class and forms part of students' participation record. Students should inform the instructor at the earliest opportunity if they need to ask for a leave. All absences may have negative effect on students' final grades. Any students with more than three unexcused absences will automatically fail the course.

Academic Integrity

As members of the Jinan University academic community, students are expected to be honest in all of their academic coursework and activities. Academic dishonesty, includes (but is not limited to) cheating on assignments or examinations; plagiarizing, i.e., misrepresenting as one's own work any work done by another; submitting the same paper, or a substantially similar paper, to meet the requirements of more than one course without the approval and consent of the instructors concerned; or sabotaging other students' work within these general definitions. Instructors, however, determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties that range from the lowering of their course grade to awarding a grade of E.