暨南大學 JINAN UNIVERSITY

2023

0701M110
Calculus I

Instructor: TBA

Time: October 16, 2023 - November 17, 2023

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

Contact Hours: 60 (50 minutes each)

Credits: 4

E-mail: TBA

Course Description

Review of algebraic and trigonometric functions and their graphs, the concepts of limit and continuity, theory and techniques of differentiation, and applications of differentiation, introduction to the theory and techniques of integration.

Required Textbook(s)

"Calculus", 11th Edition by Larson.

Coverage: Chapters 1-6, Select Sections

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.

Calculators

No graphing calculators or cell phones may be used on tests.

Assignments and Graded Work

Material will be covered very quickly; it will be difficult to catch up, should one fall behind. There are five types of assignments, four of which will be graded.

Homework:

Specific homework exercises will be assigned. It is expected that you will read the sections and complete the assignments by the given due date. Homework is for you to improve your skills. Homework will be graded. If you have questions, please contact your TA or your professor for help. You should complete the homework using topics discussed in the text and lecture. There are many ways to complete some of the homework that is not covered in Calculus I or in later chapters. You are expected to complete the homework within the confines of the objectives discussed at the time.

Participation:

You must attend student hours once a week. A discussion question will be posted and you must be ready to be called on for your response. This is a time to learn from each other and to grow in your mathematical skills. This is a pure participation grade. Incorrect answers are still participation and a way for all of us to grow.

Quizzes:

There will be quizzes when you do not have a unit test. You should work these on your own without help.

Exams:

There will be a midterm exam and a final exam. You must show work where

appropriate to get credit for the question. You must use knowledge presented in the current unit when making calculations. These will be timed. No notes, websites, or other outside resources should be used during the test.

Course Schedule

Chapter 1: Limits and Their Properties

1.2: Finding Limits Graphically and Numerically (74)

1.3: Evaluating Limits Analytically (71)

1.4: Continuity and One-Sided Limits (65)

1.5: Infinite Limits (60)

Chapter 2: Differentiation

2.1: The Derivative and the Tangent Line Problem (67)

2.2: Basic Differentiation Rules and Rates of Change (76)

2.3: Product and Quotient Rules and Higher-Order Derivatives (78)

2.4: The Chain Rule (73)

2.5: Implicit Differentiation (58)

2.6: Related Rates (56)

Chapter 3: Applications of Differentiation

3.1: Extrema on an Interval (57)

3.3: Increasing and Decreasing Functions and the First Derivative Test (64)

3.4: Concavity and the Second Derivative Test (64)

3.5: Limits at Infinity (71)

3.6: A Summary of Curve Sketching (64)

3.7: Optimization Problems (65)

Chapter 4: Integration

4.3: Riemann Sums and Definite Integrals (64)

4.2: Area (78)

4.1: Antiderivatives and Indefinite Integration (81)

4.4: The Fundamental Theorem of Calculus (111)

4.5: Integration by Substitution (82)

Chapter 5: Logarithmic, Exponential, and Other Transcendental Functions

5.1: The Natural Logarithmic Function: Differentiation (70)

5.2: The Natural Logarithmic Function: Integration (87)

5.4: Exponential Functions: Differentiation and Integration (85)

5.5: Bases Other than e and Applications (80)

5.6: Indeterminate Forms and L'Hôpital's Rule (77)

Chapter 6: Differential Equations

6.2: Growth and Decay (75)

Approximate Course Schedule

Day	TOPIC/ACTIVITY	Day	TOPIC/ACTIVITY
1	1.2 and 1.3	2	1.4 and 1.5
3	2.1	4	Quiz 1
5	2.2 and 2.3	6	2.4
7	2.5	8	2.6
9	Review	10	Midterm Exam
11	3.1 and 3.3	12	3.4 and 3.5
13	3.6	14	3.7
15	Quiz 2	16	4.3 and 4.2
17	4.1 and 4.4	18	4.5
19	5.1 and 5.2	20	5.4
21	5.5	22	5.6
23	6.2	24	Review
25	Final Exam		

Grading Policy

Homework	15%
Quizzes	25%
Midterm Exam	25%
Final Exam (Cumulative)	25%
Participation	10%

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

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 for the entire course.