

# 0701M110

## Calculus I

**Instructor:** TBA

**Email:** TBA

**Time:** June 14, 2021-July 16, 2021

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

**Contact Hours:** 60 (50 minutes each)

**Credits:**4

### Course Description

This course is the first part of a traditional two semester long sequence with a focus on differentiation. It will cover 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

**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 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

- 1.2: Finding Limits Graphically and Numerically (74)
- 1.3: Evaluating Limits Analytically (71) 1.3 More Limits
- 1.4: Continuity and One-Sided Limits (65)
- 1.5: Infinite Limits (60)
- 2.1: The Derivative and the Tangent Line Problem (67)
- Review
- Exam 1 - Friday

### Week 2

- 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)
- Review
- Exam 2 - Thursday
- 3.1: Extrema on an Interval (57)
- 3.3: Increasing and Decreasing Functions and the First Derivative Test (64)

### Week 3

- 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)
- Test Review
- 4.2: Area (78)
- 4.3: Riemann Sums and Definite Integrals (64)
- 4.1: Antiderivatives and Indefinite Integration (81)
- 4.4: The Fundamental Theorem of Calculus (111)

### Week 4

- 4.5: Integration by Substitution (82)
- Review
- Exam 3 - Wednesday
- 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)

### Week 5

- 5.6: Indeterminate Forms and L'Hôpital's Rule (77)
- 6.2: Growth and Decay (75)

- Exam 4 - Wednesday
- Review
- Final Exam- Friday

### **Grading Policy**

Exams 1 - 4	60%
Homework	10%
Quizzes	10%
Final Exam (Cumulative)	20%
<b>Total</b>	<b>100%</b>

#### ***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. It is encouraged to help each other solve homework problems, but it is acceptable to turn in essentially identical solutions; once you have discussed the problems you should write the solutions up on your own. Not all homework problems will be graded. You have to show your work in order to get credit for the homework.

#### ***Quizzes/Projects:***

There will be projects/quizzes for each chapter. You should work these on your own without help.

#### ***Exams:***

There will be four exams and a comprehensive final exam. You will have 75 minutes to take the four exams and 3 hours to complete the final exam. You must show work where appropriate in order to get credit for the question. You must use knowledge presented in the current chapter when making calculations. These will be timed. No notes, websites, or other outside resources should be used during the test.

#### ***Late Assignments and Make-up Exams***

If under ANY circumstances (excused or unexcused) you cannot take a test, you will have the ability to have the final replace your missing (or lowest) test score. However, this only holds for ONE exam. Do not send me notes from doctors, police, or other qualified professionals for absences. The date and time for the final is SET! You must show all of your work on the tests. Unsupported answers will earn no credit. Partial credit is given for correct work shown even if you do not get the correct answer.

There are no late submissions for any assignments. The due dates are firm.

### **Grading Scale**

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

<b>Definition</b>	<b>Letter Grade</b>	<b>Score</b>
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.