



0701M230

Calculus II

Instructor: TBA

E-mail: TBA

Time: May 17, 2027 - June 18, 2027

Office Hours: by appointment

Contact Hours: 60 (50 minutes each)

Credits: 4

Course Description

Techniques of integration, applications of integration, sequences and series, power series and Taylor series, parametric equations and polar coordinates.

Required Textbook(s)

Ron Larson, *Calculus*, 10 ed., ISBN: 1285057090

Prerequisites

We assume students are familiar with the standard content of a calculus I course for scientists and engineers. This includes the study of limits, derivatives, optimization of functions of a single variable, using derivatives to sketch graphs, antiderivatives and the method of substitution, definite integrals and Riemann sums, and the fundamental theorem of calculus. Moreover, they should have studied this material in the context of algebraic, exponential, logarithmic, and trigonometric functions.

Course Outline

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

Module 1

- 5.6. Inverse Trigonometric Functions: Differentiation
- 5.7. Inverse Trigonometric Functions: Integration
- 7.1. Area of a Region Between Two Curves
- **Homework 1**
- **Quiz 1**

Module 2

- 7.2. Volume: The Disk Method
- 7.3. Volume: The Shell Method
- **Homework 2**
- **Quiz 2**

Module 3

- 7.4. Arc Length and Surfaces of Revolution
- 7.5. Work
- 7.6. Moments, Centers of Mass, and Centroids
- 8.1. Basic Integration Rules
- **Homework 3**
- **Quiz 3**

Module 4

- 8.2. Integration by Parts
- 8.3. Trigonometric Integrals
- 8.4. Trigonometric Substitution
- **Homework 4**
- **Quiz 4**
- **Exam 1**

Module 5

- 8.5. Partial Fractions
- 8.7. Indeterminate Forms and L' Hôpital' s Rule
- 8.8. Improper Integrals
- **Homework 5**
- **Quiz 5**

Module 6

- 9.1. Sequences
- 9.2. Series and Convergence
- 9.3. The Integral Test and p-Series
- **Homework 6**
- **Quiz 6**

Module 7

- 9.4. Comparisons of Series
- 9.5. Alternating Series
- 9.6. The Ratio and Root Tests
- 9.7. Taylor Polynomials and Approximations
- **Homework 7**
- **Quiz 7**

Module 8

- 9.8. Power Series
- 9.9. Representation of Functions by Power Series
- 9.10. Taylor and Maclaurin Series
- **Homework 8**
- **Quiz 8**
- **Exam 2**

Module 9

- 10.2. Plane Curves and Parametric Equations

- 10.3. Parametric Equations and Calculus
- 10.4. Polar Coordinates and Polar Graphs
- 10.5. Area and Arc Length in Polar Coordinates
- **Homework 9**
- **Quiz 9**
- **Final Exam**

Grading Policy

Your grade in this course will be determined by your performance in the following categories:

Homework	15 %
Quizzes (Top 8 out of 9)	20 %
Exams	40 %
Final Exam	25 %
Total	100%

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.