

0701M376

Calculus III

Instructor: TBA

Time: December 15, 2025- January 16, 2026

Office Hours: By appointment

Contact Hours: 60 (50 minutes each)

Credits: 4

E-mail: TBA

Course Description

In this course we will study power series, Taylor series, parametric equations, directional derivatives and curvature, vectors in the plane and 3-space, quadric surfaces, cylindrical and spherical coordinates, multiple integration and differential calculus of functions of two and three variables.

Required Textbook

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

Prerequisites

0701M230 Calculus II

Course Schedule

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

Week 1.

- 9.7. Taylor Polynomials and Approximations
- 9.8. Power Series
- 9.9. Representation of Functions by Power Series
- 9.10. Taylor and Maclaurin Series
- 10.2. Plane Curves and Parametric Equations

Week 2.

- 10.3. Parametric Equations and Calculus
- 10.4. Polar Coordinates and Polar Graphs
- 10.5. Area and Arc Length in Polar Coordinates
- 11.2: Space Coordinates & Vectors in Space
- 11.3: The Dot Product of Two Vectors
- 11.4: The Cross Product of Two Vectors in Space
- Exam 1

Week 3.

- 11.5: Lines and Planes in Space
- 11.6: Surfaces in Space
- 11.7: Cylindrical and Spherical Coordinates
- 12.1: Vector-Valued Functions
- 12.2: Differentiation and Integration of Vector- Valued Functions
- 12.3: Velocity & Acceleration

Week 4.

- 12.4: Tangent Vectors & Normal Vectors Section
- 12.5: Arc Length & Curvature
- 13.1: Introduction to Functions of Several Variables
- 13.2: Limits and Continuity
- 13.3: Partial Derivatives
- 13.4: Differentials
- 13.5: Chain Rules for Functions of Several Variables.

- Exam 2

Week 5.

- 13.6: Directional Derivatives and Gradients
- 13.7: Tangent Planes & Normal Lines
- 13.8: Extrema of Functions of Two Variables
- 13.9: Applications of Extrema
- 14.1: Iterated Integrals & Area in the Plane
- 14.2: Double Integrals & Volume
- 14.3: Change of Variables: Polar Coordinates
- Final Exam

Grading Policy

Quizzes	15%
Homework	10%
Midterm Exams	50%
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.