

# 0701M230

## Calculus II

**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

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

### Required Textbook(s)

M. Weir and J. Hass, Thomas Calculus: Early Transcendentals, 12th edition, Addison-Wesley, (Pearson,) Reading, MA. ISBN: 978-0-321-58876-0

On CourseSmart as eText: ISBN-13 9780321640932

### 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 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

- Indeterminate forms and L'Hospital Rule
- Review of Basic Integration
- Review of substitution
- Inverse Trigonometric Functions: derivatives
- Inverse Trigonometric Functions: integration
- Integration by parts
- Trigonometric Integrals
- Trigonometric Substitution

### Week 2

- Partial Fractions
- Numerical Integration
- Improper Integrals
- Area Between Curves
- Volumes of Rotation: Disk Method and Shell Method
- Arc Length
- Work

### Week 3

- Center of Mass
- Sequences
- Series and Convergence
- Integral Test and p-Series
- Comparison Test of Series
- Midterm

### Week 4

- Alternating Series
- Ratio Test
- Power Series

- Representation of Functions by Power Series
- Taylor and Maclaurin Series
- Plane Curves and Parametric Equations

### Week 5

- Parametric Equations and Calculus
- Polar Coordinates and Graphs
- Area and Arc Length in Polar Coordinates
- Final Exam Review
- Final Exam

(\*). This schedule is subject to change with notice of the instructor.

### Grading Policy

Quizzes	15 %
Homework	25 %
Midterm Exam	30 %
Final Exam	30%
<b>TOTAL</b>	<b>100 %</b>

### 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.