0701M240

Introduction to Discrete Mathematics

Instructor: TBA

E-mail: TBA

Time: May 12, 2025 - June 13, 2025

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

Contact Hours: 60 (50 minutes each)

Credits: 4

Course Description

This course is an introduction of the foundations of discrete mathematics. Topics include functions, relations, sets, simple proof techniques, Boolean algebra, fundamentals of logic, partial orders, elementary number theory and the fundamentals of counting etc.

Required Textbook(s)

Susanna S. Epp, *Discrete Mathematics with Applications,* fifth edition, ISBN: 978-1-337-69419-3

Prerequisites

Pre-calculus Math.

Course Schedule

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

Week 1:

- Fundamentals of Logic: sections 2.1, 2.2, 3.1, 3.2
- Properties of the Integers; Mathematical Induction: section 4.1, 4.3, 5.2
- Recurrence Relations: section 5.6
- Quiz 1

Week 2

- Set Theory: section 6.1
- Functions: sections 7.1, 7.2
- Relations: sections 8.1, 8.2, 8.3
- Quiz 2

Week 3

- Fundamental Principles of Counting: sections 9.1, 9.2
- The Principle of Inclusion and Exclusion: section 9.3
- Rings and Modular Arithmetic: section 8.4
- Mid-term Exam

Week 4

- An Introduction to Graph Theory: sections 10.1, 10.2
- Trees: section 10.4, 10.5

- Optimization and Matching: section 10.6

- Quiz 3

Week 5

- Boolean Algebra and Switching Functions: section 6.4

- Languages: Finite State Machines: section 12.1, 12.2

- Generating Functions

- Final Exam

Grading Policy

Quizzes   30%

Exams   50%

Homework   15%

Participation   5%

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.