



DAVIS UNIVERSITY

## COURSE SYLLABUS

### MTH105: INTRODUCTION TO DISCRETE MATHEMATICS

### SUMMER QUARTER 2025

**QUARTER:** SUMMER QUARTER 2025

**COURSE SYLLABUS FOR:** MTH105 INTRODUCTION TO DISCRETE MATHEMATICS

**CREDIT HOURS:** 5 CREDITS

**INSTRUCTOR:**

**INSTRUCTOR EMAIL:**

**INSTRUCTOR OFFICE HOURS:**

**COURSE DESCRIPTION:** Introduction to the foundations of discrete mathematics, including functions, relations, sets, simple proof techniques, Boolean algebra, fundamentals of logic, partial orders, elementary number theory and the fundamentals of counting etc.

**TEXT:** *Discrete Mathematics with Applications*, 5ed, Susanna S. Epp, ISBN: 978-1-337-69419-3

**LATE WORK POLICY:** All students are expected to submit homework assignments electronically on the date specified on the syllabus. No late homework will be accepted and the student will receive a "0" (zero) for the homework assignment. Should the student refuse to complete the assigned work for the class, it could result in the student failing the class. All work assigned is expected to be completed on the date assigned. The instructor reserves the right to alter the schedule as necessary. Please be sure to check your email/Moodle for any changes to the schedule.

**PLAGIARISM AND COPYRIGHT INFRINGEMENT POLICY:** Work that is found to be plagiarized receives a grade of zero and often causes a student to fail a class. Documentation of plagiarism is added to the student's academic file as a violation of accepted student conduct and is subject to disciplinary action. Plagiarism is the use of another person's exact words, or their ideas written in the student's words without giving the original author credit.

Plagiarism can result from any of the following:

- Quote material directly without using quotation marks.
- Paraphrase the original so that many of the phrases are the same as the original. A good rule is no more than 3 or 4 words in a row should be the same as the original.
- Copy the original sentence pattern, substitution synonyms for key words.
- Neglect to indicate the source of the original material.

## **ASSESSMENTS:**

### Content

Quizzes	30%
Exams	50%
Homework	15%
Participation	5%
Total	100%

**COURSE GRADE: A = 93%-100%**

**B = 85%-92%**

**C = 77%-84%**

**D = 70%-76%**

**F = below 70%**

## TENTATIVE CLASS SCHEDULE:

(Subject to change)

Week	Content Covered	Assignments & Assessment Due
<b>Week 1:</b>	Fundamentals of Logic (2.1, 2.2, 3.1, 3.2) Properties of the Integers; Mathematical Induction (4.1, 4.3, 5.2) Recurrence Relations (5.6)	Quiz 1- Friday
<b>Week 2:</b>	Set Theory (6.1) Functions (7.1, 7.2) Relations (8.1, 8.2, 8.3)	Quiz 2
<b>Week 3:</b>	Fundamental Principles of Counting (9.1, 9.2) The Principle of Inclusion and Exclusion (9.3) Rings and Modular Arithmetic (8.4)	Midterm Exam- Friday
<b>Week 4:</b>	An Introduction to Graph Theory (10.1, 10.2) Trees (10.4, 10.5) Optimization and Matching (10.6)	Quiz 3- Friday
<b>Week 5:</b>	Boolean Algebra and Switching Functions (6.4) Languages: Finite State Machines (12.1, 12.2) Generating Functions.	Final Exam- Friday