

# Syllabus

Course Name: Discrete Mathematics (離散數學)

Textbook: "Discrete Mathematics and Its Applications", 7<sup>th</sup> Ed., written by Kenneth H. Rosen

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Grading Policy: homework 20% (be sure to turn in on time), midterm exam 40%, final exam 40%, and extra credits

Class Meetings: 2:20 PM to 5:20 PM every Tuesday

Office Hours: by appointment via phone/email or after class meetings

Course Objectives: To train students to think logically and mathematically with the focus on the following 5 themes:

1. mathematical reasoning
2. combinatorial analysis
3. discrete structure
4. algorithmic thinking
5. applications and modeling

Course Outline:

1. The foundations: Logic and Proofs
2. Basic Structures: Sets, Functions, Sequences and Sums
3. The Fundamentals: Algorithms, the Integers, and Matrices
4. Induction and Recursion
5. Counting
6. Advanced Counting Techniques
7. Graphs
8. Trees

Remarks:

1. Plagiarism is strictly prohibited.

2. A Web site will be set up for students to upload and download course related materials.
3. Active participation of all students in class meetings is highly encouraged.