<u>Syllabus</u>

Course Name: Discrete Mathematics (離散數學)

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

Instructor: 林永松 (台大管理學院貳館 Room #808, Tel: (02)3366-1191, Email: <u>yslin@im.ntu.edu.tw</u>)

Grading Policy: homework 20% (be sure to turn in on time), midterm exam 30%, final exam 30%, final presentation 20% 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.