

# Mathematics 3071: Discrete Mathematics

## Fall 2010

**Instructor:** Mrs. Kewei Yuan  
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**Lectures:** Monday, Wednesday and Friday  
8:30 am-9:30 am  
RB3026

**Lab:** Monday, 1:30 pm-2:30pm, RB 3027

**Textbook:** **Discrete Mathematics and Its Applications (Six Edition)** by Kenneth H. Rosen

**Course Content:** In this one term course, we will cover the core material, with extra attention on the basics. Students in such a course need a complete treatment of logic and proof, sets, and functions, as well as algorithms and mathematical reasoning which are extensively used in Software Engineering. Counting techniques and discrete structures can be studied effectively. Key topic involving relations is also covered in this course. The course will cover the chapters 1-8 of the textbook. Some sections of the chapters are omitted. Course content in the textbook is listed as follows

- Chapter 1: The Foundations: Logic and Proofs  
Section 1.1–Section 1.7
- Chapter 2: Basic Structures: Set, Functions, Sequences, and Sums  
Section 2.1–Section 2.4
- Chapter 3: The Fundamentals: Algorithms, the Integers, and Matrices  
Section 3.1–Section 3.6, Section 3.8
- Chapter 4: Induction and Recursion  
Section 4.1–Section 4.5
- Chapter 5: Counting  
Section 5.1–Section 5.3
- Chapter 6: Discrete Probability  
Section 6.1
- Chapter 7: Advanced Counting Techniques  
Section 7.1, Section 7.5
- Chapter 8: Relations  
Section 8.1, Section 8.3, Section 8.5

**Assignmnets:** Bi-weekly assignmnets will be given out on every other Friday's lecture and will be normally due in 10 days. All assignments should be handed in before 24:00 midnight of the due day. Late assignmnets will not be accepted. The solutions to the assignmnets will be given in the class after the due day.

**Exams:** Midterm test (Friday, October 29, 2010 ) and final exam will be closed book. No calculators are allowed during the exams.

**Course Grade:** Assignmnets 20%  
Midterm 30%  
Final Exam 50%