Discrete Mathematics (3 credits) MA308 Spring 2000 MWF 1:00 - 1:50 PM E115 SD 00 MS

- Instructor : Mi-Soo Smith Office HH018 Ext. 681 Office Hour: By Appointment
- Text Book: An Introduction to Discrete mathematics , by Steven Roman Second Edition. ISBN :0-15-541730-4 Publisher: Harcourt Brace Janovich

Course Description: Symbolic Logic, Sets and Relations, Algorithms, Mathematical Induction, Counting Techniques in Combinatorics, Recurrence Relations, Trees and Other graphs, and other Topics. Recommended for Secondary Mathematics Education and Computer and Information Sciences programs. Prerequisite: MA210.

Objectives of the Course :

- 1. Acquaint the students with a variety of mathematical concepts (other than analysis, i.e., Calculus) that will be needed in the study of computer science and in the study of mathematics.
- 2. Introduce the students to the "mathematical" way of thinking, that is, the idea of a definition, a theorem, and a proof.

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Grading Policy: Homework (30%) Oral Presentation, Quizzes and Midterm Examination (30%) Final Examination (40%)

Comments on Homework: Homework assignments will be made as the course progresses. Late submission of assignments will not earn the points. Please keep the due dates.

Course Outline : The following outline is tentative one. As the course progresses, we may need to adjust the topics . Approximately one section per session is planned.

- Chapter 1. Sets, Functions, and proof Techniques. Sections 1.1 1.5 (2 weeks)
- Chapter 2. Logic and Logic Circuits, 2.1 2.6 (2 weeks)
- Chapter 3. Relations on Sets. 3.1 3.3 (1.5 weeks)
- Chapter 4. Combinatorics. 4.1 4.9 (3 weeks) Chapter 5. More on Combinatorics. 5.1 5.8 (3 weeks)
- Chapter 6. An Introduction to graph Theory. 6.1 --- 6.10 (3 weeks)