CSE 2813 – Discrete Structures
Textbook: Kenneth Rosen, *Discrete Mathematics and Its Applications*, 5th edition, McGraw-Hill, 2003.

General topics:
1. Propositional and Predicate Logic
2. Proof techniques (especially induction)
3. Sets
4. Binary Relations, functions, equiv relations, partial orderings
5. Graphs
6. Combinatorics and recurrence
7. Analysis of Algorithms: performance measures

Detailed topics by book section:

1.1 Logic
1.2 Propositional Equivalences
1.3 Predicates and Quantifiers
1.4 Nested Quantifiers
1.5 Methods of Proof
1.6 Sets
1.7 Set Operations
1.8 Functions
2.2 Growth of Functions
2.3 Complexity of Algorithms
2.4 The Integers and Division
3.2 Sequences
3.4 Recursive Definitions
3.3 Mathematical Induction
4.1 Basics of Counting
4.3 Permutations and Combinations
4.4 Binomial Coefficients
6.1 Recurrence Relations
6.2 Solving Recurrence Relations
7.1 Relations and Their Properties
7.3 Representing Relations
7.4 Closures of Relations
7.5 Equivalence Relations
7.6 Partial Orderings
8.1 Introduction to Graphs
8.2 Graph Terminology
8.3 Representing Graphs and Graph Isomorphism