Math 321 Discrete Math I (3 Hours Credit)
Wichita State University, Mathematics and Statistics Department

Deals with discrete mathematics/structures, including ...

Propositional and predicate logic, proof techniques, recursion, inductions, and analysis of algorithms.

Sets and Combinatorics: counting principles, permutations and combinations, the

Binomial Theorem, and recurrence relations

Functions: one-to-one onto functions

Applications of Number Theory

Matrices

Text: Discrete Mathematics and Its Applications, K.H. Rosen, 6th ed.

Exam 1

Section 1.1-1.7
Propositional Logic, Propositional Equivalences, Predicates and Quantifiers, Nested Quantifiers, Rules of Inference, Introduction to Proofs, Proof Methods and Strategy

Exam 2

Section 2.1-2.4, Section 3.8
Sets, Set Operations, Functions, Sequences, Summations, and Matrices

Exam 3

Section 3.4-3.7
Integers and Division, Primes and Greatest Common Divisors, Integers and Algorithms, and Applications of Number Theory

Section 4.1 - 4.3
Mathematical Induction, Strong Induction and Well-Ordering, Recursive Definitions and Structural Induction

Exam 4

Section 5.1 - 5.4
Basics of Counting, The Pigeonhole Principle, Permutations and Combinations, Binomial Coefficients

Section 7.1 - 7.2
Recurrence Relations, Solving Linear Recurrence Relations