MAT 311 – Discrete Math

Course Description

This course provides an introduction to Discrete Mathematics, as well as its applications. Topics include: mathematical induction, sets, functions, basic number theory, graphs, trees, Boolean algebra, permutations, combinations, analysis of algorithms, probability principles and Bayes' Theorem, and finite state automata and formal languages. The course will provide foundational knowledge necessary for computer science and computer engineering studies.

Instructional Materials

Hunter, D. (2012). *Essentials of discrete math* (2nd ed.). Sudbury, MA: Jones and Bartlett Publishers.

Course Learning Outcomes

1. Solve problems using formal logic.
2. Solve problems using set theory.
3. Model relationships with graphs, functions and trees.
4. Analyze problems involving recursion.
5. Solve problems involving selections, arrangements and counting principles.
6. Solve problems using discrete probability.
7. Analyze algorithms using concepts and methods of discrete mathematics.
8. Use technology and information resources to research issues in discrete math.
9. Write clearly and concisely about discrete math using proper writing mechanics.