COMP 3240, Discrete Structures

Credit hours: 3 lecture
Contact hours: 3 lecture

Catalog Description: Characterization of computer science data structures and algorithms in terms of sets and relations, functions, recurrence relations. Use of propositional and predicate calculus to describe algorithms. Proving correctness and running time bounds for algorithms by induction and structural induction.

Prerequisites: COMP 1210
Corequisites: None

Required Course (CSCI, ECPE, SWEN, WIRS)

Instructor or Course Coordinator: Dr. Hari Narayanan

Required Textbook

Course Outcomes
The student will be able to
• demonstrate basic knowledge of discrete mathematics.
• produce rigorous proofs.
• apply notions and results of discrete mathematics to computer science.

Topics Covered
• Propositional Calculus (3 hours)
• Predicate Calculus (4 hours)
• Induction (3 hours)
• Sets, sequences and n-tuples (5 hours)
• Relations and functions (5 hours)
• Equivalence relations (1 hour)
• Posets (1 hour)
• Basic combinatorial counting principles (8 hours)
• Recurrence relations (2 hours)
• Graph theory and trees (10 hours)
• Exams (3 hours)

Course Requirements
• Exam 1 (20%)
• Exam 2 (20%)
• Exam 3 (20%)
• Final Exam (40%)
Syllabus prepared: Spring 2016