Course Title: **Discrete Mathematics for Computer Science**

Prefix and Course Number: **MATH 245**

Course Learning Outcomes:

By the end of this course, a student should be able to:

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Course Outline:

I.   Logic
  A. Propositional Logic
  B. Arguments
  C. Methods of Proofs
II. Fundamentals
  A. Sets and Operations
  B. Proofs of Set Identities
  C. Properties of Integers
  D. Matrices
  E. Mathematical Structures
III. Counting Technique
  A. Counting Principles
  B. Permutations and Combinations
  C. Probability
IV. Relations and Functions
  A. Equivalence Relations
  B. Functions
  C. Operations on Functions
V.   Graphs
  A. Representation of Graphs
  B. Directed and Indirected Graphs
  C. Trees
  D. Application of Graphs