WILMINGTON UNIVERSITY
COLLEGE OF ARTS AND SCIENCES
BASIC COURSE INFORMATION

COURSE NUMBER: MAT330

COURSE TITLE: Discrete Mathematics

Faculty Name:

Contact Information:

Pre-Requisites: MAT200 and MAT320

Text/Software:

Credits: 3

40 Hours of Structured Learning Activities

COURSE DESCRIPTION: This course provides an introduction to discrete mathematics. Topics include sets, functions and relations, mathematical induction and logic, sequences and recursion, and an introduction to Boolean algebra.

At the conclusion of this course students will be asked to evaluate the course based on the following objectives:

- Gain factual knowledge (terminology, classifications, methods, trends).
- Learn fundamental principles, generalizations or theories.
- Learn to apply course material (to improve thinking, problem solving and decisions).
COURSE GOALS

GOAL A:
Use the language and notation of sets.

   Learning Objectives: The student will:
   A-1 Modify mathematical statements.
   A-2 Apply set notation, especially to functions and relations.
   A-3 Use operations on sets.
   A-4 Apply properties of sets.
   A-5 Prove set properties and disprove alleged set properties.
   A-6 Prove statements using Boolean algebra and its properties.
   A-7 Verify trigonometric identities.
   A-8 Evaluate trigonometric functions for any angle.

GOAL B:
Use logic to create proofs.

   Learning Objectives: The student will:
   B-1 Use truth tables to evaluate the truth of compound and conditional statements.
   B-2 Rewrite quantified statements.
   B-3 Identify equivalent statements.
   B-4 Prove statements directly and disprove using counterexamples.
   B-5 Prove by contradiction and contraposition.

GOAL C:
Use mathematical induction to verify conjectures about sequences.

   Learning Objectives: The student will:
   C-1 Compute terms and create explicit formulas for sequences.
   C-2 Use summation and product notation.
   C-3 Use mathematical induction to create proofs.
   C-4 Compute terms and create recursive formulas for sequences.
   C-5 Solve recurrence relations by iteration.

EVALUATION PROCEDURE AND GRADING POLICY:

LATE ASSIGNMENT POLICY:

CAS CLASSROOM STANDARDS: See Blackboard “Syllabus” area

COURSE SCHEDULE (all assignments/exams and due dates):