

MATH 120 – Logic for Information Technology – SYLLABUS
Department of Mathematics
Millersville University

Description

Discrete mathematics and its applications to technology including formal mathematical notation, propositional logic, predicate logic, set theory, relations, functions, and matrices. No credit toward a math or four-year computer science major. (2 credits)

This course may be taken for general education credit (G2)

Prerequisites

MPT 120 or C- or higher in MATH 101.

Course Objectives

By the conclusion of this course the successful student will be able to:

- Construct valid mathematical arguments using logical connectors and quantifiers.
- Verify arguments using appropriate techniques including symbolic logic and truth tables.
- Solve problems involving recurrence relations and functions.
- Perform operations on discrete structures including sets, relations and functions.
- Solve problems using basic counting techniques and combinatorics.
- Construct matrices and perform basic matrix operations.

Assessment

Assessment of student achievement of the course objectives will vary from one instructor to another. Typical assessment will be made through work in class, homework, and examinations.

Use of Technology

Calculator: A scientific calculator will be beneficial (e.g., TI-34II or comparable).

Topics

- Number systems
- Propositional Logic
- Predicate Logic
- Sets
- Relations
- Functions
- Matrices