

# Bemidji State University

## MATH 2210: Discrete Mathematics

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Symbolic logic, number concepts, mathematical induction, set theory, relations and functions, graphs, trees, recurrence relations, and complexity of algorithms. Prerequisites: CS 1309 or Math 1470 or higher or three years of high school mathematics (including two years of algebra) and an appropriate score on the Mathematics Placement Test. Prerequisites: CS 1309 or (CS 1107 and CS 1108) or Math 1470 or higher or three years of high school mathematics (including two years of algebra) and an appropriate score on the Mathematics Placement Test.

**B. COURSE EFFECTIVE DATES:** 08/27/2012 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Introduction to logic and proof
2. Sets, relations and functions
3. Mathematical induction
4. Congruence and the Euclidean Algorithm
5. Graphs, trees and their applications
6. Counting techniques

### D. LEARNING OUTCOMES (General)

1. Understand the fundamental concepts and methods of discrete mathematics.
2. Analyze problems, discern structure and pattern and make conjectures in discrete mathematical contexts.
3. Develop valid mathematical proofs.
4. Communicate mathematical ideas and understanding effectively.
5. Develop and appreciation of mathematics and the wide range of applications of discrete mathematics.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted