

Bemidji State University

MATH 3065: Mathematical Foundations of Algebra for Teachers

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course investigates concepts of patterns, relations, and functions. Prerequisites: MATH 1011 or equivalent or consent of instructor. Might not be offered every year.

B. COURSE EFFECTIVE DATES: 01/13/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. 88 Problem
2. Alge-blocks
3. Beams
4. Growing Letters
5. Issues with Balance Scales
6. Relating Intuition and Algebra
7. Using Manipulatives - a Balance Scale Approach
8. Virtual Balance Scales

D. LEARNING OUTCOMES (General)

1. demonstrate knowledge of fundamental concepts of mathematics and the connections among them.
2. understand patterns present in number systems and apply these patterns to further investigations
3. understand concepts of patterns, relations, and functions.
4. represent and solve problem situations that involve variable quantities and be able to use appropriate technology, manipulatives, graphing calculators, or computers, as they make oral presentations explaining their approaches and solution strategies.
5. recognize, describe, and generalize patterns and build mathematical models to describe situations, solve problems, and make predictions.
6. analyze the interaction within and among quantities and variables to model patterns of change and use appropriate representations, including tables, graphs, matrices, words, algebraic expressions, and equations.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted