

# Bemidji State University

## MATH 1107: Introduction to Mathematical Sciences

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course integrates the study of algebra, statistics, and computing in a laboratory-instruction environment. Topics include functions, graphical and tabular analysis, rate of change, syntax and semantics, the process of computing, data manipulation, sampling, statistical measures, basic probability, and correlation. Examples are drawn from a wide range of disciplines and content is taught within the framework of discipline-specific examples. Students learn to use the software package Microsoft Excel. Not open to students who have completed Math 1100 or Math 1170. Prerequisites: Two years of high school algebra and an appropriate score on the Mathematics Placement Test or MATH 0800 with a grade of C or better. Liberal Education Goal Area 4.

**B. COURSE EFFECTIVE DATES:** 06/02/2008 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Algebra Topics:
  - Functions
  - Graphical and Tabular Analysis
  - Linear Functions
  - Other Common Functions
2. Technology Topics:
  - Syntax and Semantics
  - Understanding Processes
  - The notion of a "variable" in computing
  - Formulas and expressions
  - Making decisions
  - Using functions
3. Statistics Topics
  - Collecting and displaying data in tabular and graphical format
  - Types of data
  - Measures of central tendency
  - Measures of dispersion
  - Shapes of distributions
  - Correlation and association
  - Brief introduction to linear regression

### D. LEARNING OUTCOMES (General)

1. learn basic algebra, statistics, and technology skills within the context of university wide discipline specific topics
2. gain basic proficiencies with using Microsoft Excel to solve problems in the mathematical sciences.

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

Goal 04 - Mathematical/Logical Reasoning

1. No Competencies Indicated
2. Illustrate historical and contemporary applications of mathematical/logical systems.
3. Clearly express mathematical/logical ideas in writing.
4. Explain what constitutes a valid mathematical/logical argument(proof).
5. Apply higher-order problem-solving and/or modeling strategies.

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted