

# Bemidji State University

## MATH 1100: Mathematical Reasoning

### 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

Mathematical reasoning and algebraic concepts applied to a selection of topics, which may include the mathematics of social choice, and the mathematics of management, geometry, and problem solving. Descriptive statistics and introductory probability and inferential statistics. A graphing calculator is required. Not open to students who have completed Math 1107 or Math 1170. Prerequisites: Two years of high school algebra and an appropriate score on the Mathematics Placement Test or completion of MATH 0800 with a grade of C or better. Liberal Education Category 4.

**B. COURSE EFFECTIVE DATES:** 05/11/2011 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Problem solving
2. Solving linear and quadratic equations
3. Solving basic inequalities
4. Graphing simple relations and functions
5. Basic probability, statistics, and data organization
6. Counting, permutations and combinations
7. Financial matters
8. Voting systems and apportionment

### D. LEARNING OUTCOMES (General)

1. further develop their algebraic manipulative skills
2. learn to use their algebra skills to model and solve practical problems
3. learn to appreciate mathematics for its beauty, utility and structure through the study of mathematics and its applications to other disciplines.
4. be able to apply problem solving strategies to look at problems from several points of view and judge the appropriateness of various models and techniques in each problem situation.
5. learn to communicate problems and solutions in a mathematically logical fashion.

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

Goal 04 - Mathematical/Logical Reasoning

1. Clearly express mathematical/logical ideas in writing.
2. Illustrate historical and contemporary applications of mathematical/logical systems.
3. Explain what constitutes a valid mathematical/logical argument(proof).
4. Apply higher-order problem-solving and/or modeling strategies.

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted