

# Bemidji State University

## MATH 2471: Calculus I

### A. COURSE DESCRIPTION

Credits: 5

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

Limits, differentiation and integration of algebraic and trigonometric functions; applications of the derivative and curve sketching; applications of integration. A graphing calculator is required. Prerequisite: An appropriate ACT math subscore or Mathematics Placement Test score or a grade of C or better in MATH 1470 or grades of C or better in both MATH 1170 and MATH 1180 or consent of instructor. Liberal Education Goal Area 4.

**B. COURSE EFFECTIVE DATES:** 10/28/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Limits and Their Properties
2. Differentiation
3. Applications of Differentiation
4. Integration
5. Logarithmic, Exponential, and Other Transcendental Functions
6. Differential Equations

### D. LEARNING OUTCOMES (General)

1. develop an understanding of the basic concepts, methods and content of calculus.
2. be able to use calculus in problem solving and mathematical modeling.
3. be able to apply problem solving strategies to look at problems from multiple points of view and judge the appropriateness of various models and techniques in each problem situation.
4. be able to construct logical mathematical arguments in order to communicate problems and solutions effectively both orally and in writing.
5. gain an understanding and appreciation of the structure and beauty of mathematics, the economy and power of its notation and its applications in the world around us.

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

Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
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