

# Bemidji State University

## MATH 2490: Differential Equations

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Ordinary differential equations including first order and second order linear equations, series solutions, Laplace transformations, existence and uniqueness theory, systems of linear and nonlinear equations, dynamical systems and applications. A graphing calculator is required. Prerequisite: MATH 2472.

**B. COURSE EFFECTIVE DATES:** 08/21/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Solving and applying first and second order linear and nonlinear differential equations. Methods such as separation of variables, exact equations, reduction of order, undetermined coefficients, variation of parameters and the Cauchy-Euler equation will be considered.
2. Systems of Equations
3. The Laplace Transform

### D. LEARNING OUTCOMES (General)

1. develop proficiency at
  - (1) solving differential equations
  - (2) conceptually understanding differential equations
  - (3) applying differential equations to simple problems in the sciences.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted