

# Bemidji State University

## MATH 4350: Abstract Algebra

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

A study of abstract algebraic systems with an emphasis on the development of number systems, properties of polynomials, rings, integral domains and fields. Prerequisites: MATH 3310. (Might not be offered every year.)

**B. COURSE EFFECTIVE DATES:** 10/19/2000 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Euclidean algorithm, modular arithmetic and congruences
2. Rings, integral domains and fields
3. Number systems
4. Polynomial rings and factorization
5. Field extensions

### D. LEARNING OUTCOMES (General)

1. Understand the fundamental concepts and methods of abstract algebra.
2. Analyze problems, discern structure and pattern and make conjectures in algebraic contexts.
3. Apply creative and analytic thinking to develop clear and valid algebraic proofs.
4. Communicate mathematical ideas and understanding effectively.
5. Appreciate the beauty and diversity of algebraic structures.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted