

# Minnesota State University Moorhead

## MATH 476: Abstract Algebra I

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires both of these prerequisites

MATH 311 - Introduction to Proof and Abstract Mathematics

MATH 327 - Introduction to Linear Algebra

Corequisites: None

MnTC Goals: None

Groups, rings and integral domains studied as abstract mathematical systems. Lagrange's theorem, factor groups, homomorphisms, polynomial rings and quotient rings.

**B. COURSE EFFECTIVE DATES:** 06/01/1995 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Groups, subgroups, permutation groups, normal subgroups, factor groups, isomorphisms and homomorphisms of groups.
2. Rings, integral domains, and fields, ideals, factor rings, homomorphisms and isomorphisms of rings.

### D. LEARNING OUTCOMES (General)

1. Recognize basic algebraic structures.
2. Understand morphisms in algebra.
3. Appreciate general algebraic structure inherent in familiar systems such as the integers, rational numbers, and polynomials.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted