Bemidji State University

MATH 4371: Modern Algebra

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *
Prerequisites: None
Corequisites: None
MnTC Goals: None

A study of abstract algebraic systems with an emphasis on groups and an introduction to rings.
Prerequisite: MATH 3310.

B. COURSE EFFECTIVE DATES: 12/31/2003 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Properties of integers, modular arithmetic and complex numbers
2. Introduction to groups and their properties
3. Cyclic and permutation groups
4. Isomorphisms
5. Cosets and Lagrange's Theorem
6. Normal subgroups and factor groups
7. Group homomorphisms
8. Introduction to Rings, integral domains and fields

D. LEARNING OUTCOMES (General)

1. understand the fundamental concepts and methods of modern 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