A. Course Description

Credits: 4

Prerequisites: MATH 301 Introduction to Analysis AND MATH 315 Linear Algebra and Applications

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

MnTC Goals: Goal LS - Upper Division Liberal Studies, Goal EL - General Education/Liberal Studies Elect.

By extending the familiar concepts of arithmetic, this course introduces abstract algebraic structures. Topics include an introduction to number theory; group theory, including the classification of all finite abelian groups; rings, integral domains, and fields.


C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Be able to read and understand mathematical proofs.
2. Be able to write well-structured and logically correct mathematical proofs.
3. Understand divisibility in the context of the integers and modular arithmetic.
4. Understand the basic properties of groups and rings.
5. Understand the role of functions in abstract algebra including the concepts of homomorphism and isomorphism.
6. Understand the structure of finite abelian groups.

E. Learning Outcomes (MN Transfer Curriculum)

Goal LS - Upper Division Liberal Studies

None

Goal EL - General Education/Liberal Studies Elect.

None

G. Special Information

None