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Math 361 Algebraic Structures II

Meets in Hertz 120

Special Needs
Please contact me if you have special needs.

Assessment and Evaluation
1) Homework 15%
2) Quizzes 15%
3) Participation 10%
3) Midterm 30%
4) Final Exam 35%

Final Grading
93-100% A
90-92% A-
87-89% B+
83-86% B
80-82% B-
77-79% C+
73-76% C
70-72% C-
67-69% D+
63-66% D
60-62% D-
Below 60% F

Course Description
Algebraic Structures II is the study of various types of sets (categories) and their inherent structures. In this course, we examine rings, fields, and their structure preserving functions (morphisms).

Objectives
1) Students will demonstrate reasoning and problem solving ability by modeling, generalizing, and justifying the main notions associated with Algebraic Structures, particularly Rings, Fields and their morphisms.
2) Students will demonstrate excellent written and oral communication in their demonstrations of Objective 1).
3) Students will demonstrate cooperative learning skills both inside and outside of class.

Schedule
Week 1-Subgroups
Week 2-Partially Abelian Groups,Conjugacy Classes, Center;
Normal Subgroups
Week 3-Quotient Groups
Week 4-Fundamental Homomorphism Theorem
Week 5-Rings and Fields I
Week 6-Rings and Fields II
Week 7-Applications of Rings and Fields
Week 8-The Complex Field
Week 9-Vector Spaces and Algebras
Week 10-Vector Spaces and Algebras

About This Class
Algebraic Structures is traditionally a course in the mathematics curriculum that demands formal use of logic to prove theorems. The course content highlights a framework supporting nearly ALL modern mathematics. As such, the subject cannot be learned by cursory survey, but must be examined with intensity. Take time to think about and discuss ideas and to write and rewrite proofs. Make working with others a priority, but also take time to internalize the ideas yourself. Rewards for your hard work will include understanding the "superstructure" of mathematics.

Text
An Introduction to Abstract Algebra with Notes to the Future Teacher by Olympia Nicodemi, Melissa A. Sutherland, and Gary W. Towle.