

Math 2303 Concepts in Algebra – Course Outline

Chapter 1 Counting and Measuring

- Section 1.1 Systems of Numerations and Additive Systems
- Section 1.2 Alphabetic and Multiplicative Systems of Numeration
- Section 1.3 Place Value Systems of Numeration
- Section 1.4 Place Value Systems in Other Bases
- Section 1.5 Arithmetic in Other Bases
- Section 1.6 Systems of Measurement
- Section 1.7 Dimensional Analysis

Chapter 2 Real Numbers and their Properties

- Section 2.1 Developing the Real Number System from Counting Numbers
- Section 2.2 The Relationships Between Subsets of the Real Number System
- Section 2.3 Exponents and Radicals
- Section 2.4 Scientific Notation
- Section 2.5 Order – Comparing Real Numbers
- Section 2.6 Basic Number Theory – Primes and Prime Factorization
- Section 2.7 Greatest Common Factor and Least Common Multiple
- Section 2.8 Properties of Real Number Operations

Chapter 3 Equations and Inequalities

- Section 3.1: Variables, Expressions and the Order of Operations Rule
- Section 3.2: Equations and Inequalities
- Section 3.3: Solving Equations
- Section 3.4: Using a Scientific Calculator
- Section 3.5: Using Formulas
- Section 3.6: Solving Problems using Equations
- Section 3.7: Solving Inequalities

Chapter 4 Graphing Lines and Inequalities

- Section 4.1: Graphing Linear Equations
- Section 4.2: Writing Equations of Lines
- Section 4.3: Graphing Linear Inequalities

Chapter 5

Functions

- Section 5.1: Functions, Domains and Ranges
- Section 5.2: Linear Functions and Modeling
- Section 5.3: Factoring
- Section 5.4: Solving Quadratic Equations by Factoring
- Section 5.5: Solving Quadratic Equations using Square Roots
- Section 5.6: Solving Quadratic Equations using the Quadratic Formula
- Section 5.7: Solving Problems using a Quadratic Equation
- Section 5.8: Graphing Quadratic Functions
- Section 5.9: Graphing Other Non-linear Functions

Chapter 6

Systems of Equations and Systems of Inequalities

- Section 6.1: Systems of Equations
- Section 6.2: Solving Systems of Equations by Substitution
- Section 6.3: Solving Systems of Equations by Elimination and Solving Problems using Systems of Equations
- Section 6.4: Graphing Systems of Inequalities

Chapter 7

Introduction to Abstract Algebra

- Section 7.1 Patterns
- Section 7.2 Arithmetic Sequences
- Section 7.3 Geometric Sequences
- Section 7.4 Abstract Mathematical Systems
- Section 7.5 Special Mathematical Systems – Groups
- Section 7.6 Finite Groups
- Section 7.7 Abstract Systems and Modeling