

COURSE TOPICS — Math 11100 – Algebra

TEXTBOOK: Lial, Hornsby, & McGinnis, *Intermediate Algebra*, Fourth Custom Edition for IUPUI, Lial, Hornsby and McGinnis. This is the same textbook as the hardback 11th Edition of *Intermediate Algebra*.

Chapter 2: Linear Equations, Inequalities, and Applications

- 2.5 Linear Inequalities in One Variable
- 2.6 Set Operations and Compound Inequalities
- 2.7 Absolute Value Equations and Inequalities

Chapter 3: Graphs, Linear Equations, and Functions

- 3.1 The Rectangular Coordinate System
- 3.2 The Slope of a Line
- 3.3 Linear Equations in Two Variables
- 3.5 Introduction to Relations and Functions
- 3.6 Function Notation and Linear Functions

Chapter 4: Systems of Linear Equations

- 4.1 Systems of Linear Equations in Two Variables
- 4.3 Applications of Systems of Linear Equations

Chapter 5: Exponents, Polynomials, and Polynomial Functions

- 5.1 Integer Exponents and Scientific Notation
- 5.2 Adding and Subtracting Polynomials
- 5.3 Polynomial Functions; Composition
- 5.4 Multiplying Polynomials
- 5.5 Dividing Polynomials

Chapter 6: Factoring

- 6.1 Greatest Common Factors; Factoring by Grouping
- 6.2 Factoring Trinomials
- 6.3 Special Factoring
- 6.4 A General Approach to Factoring
- 6.5 Solving Equations by Factoring

Chapter 7: Rational Expressions and Functions

- 7.1 Rational Expressions and Functions; Multiplying and Dividing
- 7.2 Adding and Subtracting Rational Expressions
- 7.3 Complex Fractions
- 7.4 Equations with Rational Expressions and Graphs
- 7.5 Applications of Rational Expressions

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Chapter 8: Roots, Radicals, and Root Functions

- 8.1 Radical Expressions and Graphs
- 8.2 Rational Exponents
- 8.3 Simplifying Radical Expressions
- 8.4 Adding and Subtracting Radical Expressions
- 8.5 Multiplying and Dividing Radical Expressions
- 8.6 Solving Equations with Radicals
- 8.7 Complex Numbers

Chapter 9: Quadratic Equations, Inequalities, and Functions

- 9.1 The Square Root Property and Completing the Square
- 9.2 The Quadratic Formula
- 9.3 Equations Quadratic in Form
- 9.4 Formulas and Further Applications
- 9.5 Graphs and Quadratic Functions
- 9.6 More About Parabolas; Applications
- 9.7 Quadratic and Rational Inequalities

Chapter 10: Inverse, Exponential, and Logarithmic Functions

- 10.1 Inverse Functions
- 10.2 Exponential Functions
- 10.3 Logarithmic Functions
- 10.4 Properties of Logarithms
- 10.5 Common and Natural Logarithms
- 10.6 Exponential and Logarithmic Equations; Further Applications