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SUGGESTED FOR
MTH 05
BASIC CONCEPTS OF MATHEMATICS I

Textbook: Elementary and Intermediate Algebra: A Unified Approach /
Authors: Donald Hutchison, Barry Bergman, Louis Hoelzle

Section Topics of the Textbook

CODE NO. **TITLE** - *35 min ea. c2004*

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- 0.1 A Review of Fractions 2
- 0.2 The Integers 10
- 0.3 Adding and Subtracting Signed Numbers 16
- 0.4 Multiplying and Dividing Signed Numbers 28
- 0.5 Exponents and Order of Operations 42

MODUMATH PERCENT & SIGNED NUMBERS *(SERIES)* - *c1973*

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Lesson 5.2 Adding signed numbers

V2522.4 **Lesson 5.3** Subtracting signed numbers
Lesson 5.4 Multiplying signed numbers

V2522.5 **Lesson 5.5** Dividing signed numbers
Lesson 5.6 Signed fractions

DEVELOPMENTAL MATHEMATICS *(SERIES)* - ***c1991***

V1502.4 Add signed numbers
Subtract signed numbers

ESSENTIAL ALGEBRA *(SERIES)* - ***c1991***

V1415.1 Add signed numbers
Subtract signed numbers

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- 1.1 Transition to Algebra
- 1.2 Evaluating Algebraic Expressions
- 1.3 Adding and Subtracting Algebraic Expressions
- 1.4 Sets

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Equations and Inequalities
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2.2 Solving Equations by Multiplying and Dividing
2.3 Combining the Rules to Solve Equations
2.4 Literal Equations and Their Applications
2.5 Solving Linear Inequalities
2.6 Absolute Value Equations and Inequalities

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Graphs and Linear Equations
3.1 Solutions of Equations in Two Variables
3.2 The Cartesian Coordinate System
3.3 The Graph of a Linear Equation
3.4 The Slope of a Line
3.5 Forms of Linear Equations

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V3464.8 **SYSTEMS OF LINEAR EQUATIONS & INEQUALITIES**

DVD712.2 Addition and Subtraction of Polynomials ***– 20 min, c1987***

V2977.10 Adding and Subtracting Polynomials

DVD712 Multiplication of Polynomials ***– 15 min, c1987***

V3464.6 **Chapter 6**
Factoring Polynomials
5.1 An Introduction to Factoring
5.2 Factoring Special Polynomials
5.4 Factoring Trinomials: The ac Method
5.6 Solving Quadratic Equations by Factoring

DVD712.4 Division of Polynomials ***– 20 min, c1987***

V3464.10 **Chapter 10** Radicals and Exponents
10.2 Evaluating Radical Expressions

BRONX COMMUNITY COLLEGE * CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS: MTH 05 Basic Concepts of Mathematics I (0 credits, 6 hours)

TEXT: Elementary and Intermediate Algebra: A Unified Approach, 4th Ed., Baratto, Bergman, McGraw-Hill, ISBN 978-0-07-338419-1

Learning Objectives: Proficiency in operations with signed numbers, and in the solution and graphical representation of linear equations. Proficiency in polynomial operations, factoring, and the solution and graphical representation of quadratic equations. Proficiency in operations involving rational exponents and manipulation of radical expressions.

The Arithmetic of Signed Numbers (6 hours)

0.1 Review of fractions	p.11/ 15,31,37,45,49,57,69,73,77,79,81,91
0.2 Integers	p.22/ 41,43,47
0.3 Adding and Subtracting Signed Numbers	p.33/ 3,13,25,29,41,45,61,63,71,75,77
0.4 Multiplying and Dividing Signed Numbers	p.46/ 5,7,23,27,35,49,51,57,61,65,67

Evaluating Algebraic Expressions (6 hours)

0.5 Order of operations	p.58/ 17,19,21,37,43,51,59,65,71,73
1.1 Translating algebraic expressions	p.78/ 13,17,25,35,43,49,79,81
1.2 Evaluating algebraic expressions	p.95/ 5,15,21,25,29,43,49,51,59,61,63,64

Linear Equations (12 hours)

1.3 Combining like terms	p.105/ 11,20,41,55,57,63,65,73,79,85,93
1.4 Solving linear equations: Addition property	p.121/ 5,15,33,35,41,43,53,67,69,81,87
1.5 Solving linear equations: Multiplication property	p.132/ 7,19,31,37,39,47,49,53,57,63
1.6 Combining rules	p.147/ 3,11,31,37,41,43,47,51,63,79,81,83
1.7 Literal equations	p.163/ 13,21,33,37,41,45,46,49,59,61,63,64
1.8 Solving linear inequalities	p.179/ 31,39,51,65,67,73,75

Graphing Linear Equations (10 hours)

2.2 Linear equations in two variables	p.268/ 3,11,13,21,23,27,29,31
2.3 The Cartesian coordinate system	p.230/ 1-5,11,13,39,41
3.1 The graph of a linear equation	p.306/ 1,5,13,15,21,23,31,35,45,49
3.2 Slope	p.330/ 1,5,11,19,23,25,27,29,31,33,37
3.3 Point-slope form of a line	p.350/ 1,5,7,9,13,15,23,27,35,39,51
3.5 Graphing linear inequalities	p.377/ 5,7,9,13,19

Systems of Linear Equations (2 hours)

4.1 Graphing systems of linear equations	p.407/ 1,5
4.3 Systems of equations in two variables (addition/elimination)	p.439/ 1,3,5,9,27,31,49,51,55

Operations with polynomials (8 hours)

5.1 Positive integer exponents	p.488/ 1,3,17,21,43,53,61,63
5.2 Zero and negative integer exponents [Optional]	p.503/ 1,5,7,25,31,35,57,79,97,101,117
5.3 Definition of polynomials	p.515/ 11,25,31,35
5.4 Addition and subtraction of polynomials	p.524/ 7,13,17,21,25,31,37,57
5.5 Multiplying polynomials	p.539/ 13,23,27,43,45,51,63,71,83
5.6 Division by monomials [Not by binomials]	p.553/ 1-11 odd

Factoring polynomials (10 hours)

6.1 Introduction to factoring	p.627/ 1,11,21,27,35,47,59,67,69
6.2 Difference of squares [No sums or differences of cubes]	p.639/ 13,19,27,37,41
6.3 Factoring monic trinomials	p.651/ 21 – 55 odd
6.4 Factoring non-monic trinomials	p.665/ 59,63,69 – 83 odd, 97,101
6.6 Solving equations by factoring	p.684/ 1,5,9,11,17,23.25,47,63
6.7 Some word problems involving quadratic equations	p.696/ 1,9,11,15,19,21

Radical expressions and complex numbers (8 hours)

7.1 Introduction to roots and radicals	p.723/ 1,3,5,7,15,35
7.2 Simplifying radical expressions [No variables]	p.737/ 3-19 odd, 41,45,51,55
7.3 Operations with radical expressions [No rationalizing binomials]	p.751/ 1,9,11,15,39,45,55,67
7.6 Complex numbers [notation only, no operations]	p.788/ 1-9odd i

Quadratic equations and some conics (10 hours)

8.1 Special methods, completing the square	p.817/ 1,5,9,13,33,37
8.2 The quadratic formula	p.833/ 5,11, 21 – 35 odd, 51,57,63,69,75
8.3 Parabolas [Graph by table]	p.849/ 1-8, 25 – 35 odd

AM/Fall 2010