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 [i notation only, no operations]	p.788/ 1-9odd

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

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