

**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, 3<sup>rd</sup> Ed., Baratto, Bergman

**The Arithmetic of Signed Numbers (6 hours)**

0.1	Review of fractions	p.9/ 15,31,37,45,49,57,69,73,77,79,81,91
0.2	Integers	p.20/ 41,43,47
0.3	Adding and Subtracting Signed Numbers	p.32/ 3,13,25,29,41,45,61,63,71,75
0.4	Multiplying and Dividing Signed Numbers	p.48/ 5,7,23,27,35,49,51,57,61,65,67,69,73

**Evaluating Algebraic Expressions (6 hours)**

0.5	Order of operations	p.60/ 17,19,21,37,43,51,59,65,71
1.2	Evaluating algebraic expressions	p.95/ 5,15,21,25,29,43,49,51,61,67,69

**Linear Equations (12 hours)**

1.1	Translating algebraic expressions	p.81/ 13,17,25,35,43,49,79
1.3	Combining like terms	p.110/ 11,20,41,55,57,63,65,73,79
2.1	Solving linear equations: Addition property	p.149/ 5,15,33,35,41,43,53,67,69,81,87
2.2	Solving linear equations: Multiplication property	p.164/ 7,19,31,37,39,47,49,53,57,63
2.3	Combining rules	p.181/ 3,11,31,37,41,43,47,51,63,79,81,83
2.4	Literal equations	p.198/ 3,9,13,21,33,37,41,45,46,47,61
2.5	Solving linear inequalities (I)	p.211/ 31,39
2.6	Solving linear inequalities (II)	p.224/ 7,21,29,31

**Graphing Linear Equations (10 hours)**

3.1	Linear equations in two variables	p.268/ 3,11,21,23,27,29,31
3.2	The Cartesian coordinate system	p.280/ 1-5,11,13,39,41
3.3	The graph of a linear equation	p.303/ 1,5,13,15,21,23,31,35,45
3.4	Slope	p.328/ 1,5,11,19,25,31,33,37
3.5	Point-slope form of a line	p.347/ 1,5,7,9,13,15,23,35,39,51
3.6	Graphing linear inequalities	p.360/ 5,7,9,13,19

**Systems of Linear Equations (2 hours)**

8.2	Systems of equations in two variables (addition/elimination)	p.817/ 1,3,5,9,27,31,49,51
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**Operations with polynomials (8 hours)**

4.1	Positive integer exponents	p.388/ 1,3,17,21,49,55,63
4.2	Zero and negative integer exponents [Optional]	p.404/ 1,5,7,25,31,35,57,77,81,99,103
4.3	Definition of polynomials	p.416/ 11,25,31,35
4.4	Addition and subtraction of polynomials	p.426/ 7,13,17,21,25,31,37,57
4.5	Multiplying polynomials	p.441/ 13,23,27,43,45,51,63,71,83
4.6	Division by monomials [Not by binomials]	p.455/ 1-11odd

**Factoring polynomials (10 hours)**

5.1	Introduction to factoring	p.476/ 1,11,21,27,35,47,63,65
5.2	Difference of squares [No sums or differences of cubes]	p.488/ 13,27,37,41
5.4	Quadratic trinomials	p.513/ 21 – 71 odd
5.6	Solving equations by factoring	p.531/ 1,5,11,17,41,53
5.7	Some word problems involving quadratic equations	p.542/ 1,9,11,15,19,21

**Radical expressions and complex numbers (8 hours)**

10.1	Introduction to roots and radicals	p.943/ 1,3,5,7,15,37,39,43,51
10.2	Simplifying radical expressions [No variables]	p.957/ 3-19 odd, 43,47,55,57,61,63
10.3	Operations with radical expressions [No rationalizing binomials]	p.972/ 3,11,15,39,45,55,67
10.6	Complex numbers [ $i$ notation only, no operations]	p.1009/ 1-9odd

**Quadratic equations and some conics (10 hours)**

11.1	Special methods, completing the square	p.1033/ 3,9,15,33,37,43,51
11.2	The quadratic formula	p.1049/ 5,11,21,25,33,51,57,63,69
11.3	Parabolas [Graph by table]	p.1070/ 17-22all