

**QUEENSBOROUGH COMMUNITY COLLEGE  
MATHEMATICS AND COMPUTER SCIENCE DEPARTMENT**

**COURSE OUTLINE**

**MA-010**

**MA-010 ELEMENTARY ALGEBRA**

**Pre-requisite:** MA-005 or placement score of 30 or more on COMPASS arithmetic.

**Hours:** 5 Class Hours 0 Credits

**Course Description:** Signed numbers, polynomials, geometric concepts, graphing, solution of linear and quadratic equations by graphing and algebraic methods, word problems, slope and y-intercept, factoring and its applications.

**Curricula for which the course is required/recommended:**

All A.S., A.A., and A.A.S. Degree Programs

**General Education Objectives:** Use quantitative skills and mathematical reasoning to solve problems with the aid of tools and techniques learned; reason quantitatively and mathematically as required in their fields of interest and in everyday life; integrate knowledge and skills in their program of study; use information management and technology skills effectively for academic research and lifelong learning.

**Course Objectives/ Expected Student Learning Outcomes:** Understand the important concepts of algebra and geometry, and apply them to solve problems in mathematics, the sciences, and other disciplines; interpret and appreciate, both qualitatively and quantitatively, the areas in which equations can be used to solve problems; draw conclusions, and communicate results to others orally, from graphs of linear functions; use calculators in mathematical investigations.

**Text:** INTRODUCTORY ALGEBRA: AN APPLIED APPROACH-Student Support  
Edition, 7th ed., 2009  
by Richard N. Aufmann, Vernon C. Barker, & Joanne S. Lockwood  
Houghton Mifflin, Publisher/ Cengage

A four-function calculator with square-root key is required for this course.

**Methods by which student learning will be evaluated:**

The general guidelines for assessing grades are as follows:

- |   |     |
|---|-----|
| ○ Examinations, Assignments and Classroom Performance | 67% |
| ○ Final Examination                                   | 33% |

Students must meet all the following conditions:

1. 70% overall average where the uniform final exam is counted as at least 1/3 of the grade **and**
2. A minimum of 55% on the uniform final **and**
3. Must pass the COMPASS Part 2

Students who satisfy condition 1 and 2 but fail the COMPASS will be assigned a grade of NC.

**Academic Integrity:** Academic honesty is taken extremely seriously and is expected of all students. All assignments must be the original work of the student (and partners or group, if applicable). All questions or concerns regarding ethical conduct should be brought to the course instructor. "It is the official policy of the College that all acts or attempted acts that are violations of academic integrity be reported to the Office of Student Affairs (OSA). At the faculty member's discretion and with the concurrence of the student or students involved, some cases, though reported to the OSA, may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grades as deemed appropriate, including assigning an F to the assignment or exercise or, in more serious cases, an F to the student for the entire course." (Taken from the QCC Academic Integrity Policy, 2/14/2005.)

**NOTE:** Any student who feels that he/she may need an accommodation based upon the impact of a disability should contact the instructor privately to discuss his/her specific needs. Please contact the office of Services for Students with Disabilities in Science Building, room 132 (718 631 6257) to coordinate reasonable accommodations for students with documented disabilities.

<u>TOPICS</u>	<u>SECTIONS</u>	<u>HOURS</u>
Real Numbers: Operations with Integers and Rational Numbers, Exponents and Order of Operations. Concepts from Geometry.	1.1 - 1.8	7
Variable Expressions: Evaluating, Simplifying and Translating.	2.1 - 2.3	5
Linear Equations: Solving Algebraically. Number and Geometry Applications.	3.1 - 3.5	7
Polynomials: Addition, Subtraction, Multiplication and Division including Area Applications, Negative Exponents and Scientific Notation.	4.1 - 4.5a	7
Factoring: Common Factor, Trinomial, and Special. Solving Equations by Factoring.	5.1 - 5.5	8
Rational Expressions: Multiplication, Division, Addition and Subtraction. Solving Fractional Equations and Applications.	6.1 - 6.3, 6.5 - 6.7	11
Radical Expressions: Simplifying, Addition, Subtraction, Multiplication, and Division. Solving Equations with Radicals. Pythagorean Theorem.	10.1 – 10.4	4
Graphing Linear Equations: Intercepts and Slope-Intercept Methods. Scatter Plots.	7.1 - 7.3	7
Systems of Linear Equations: Solve Graphically and Algebraically.	8.1 - 8.3	4
Inequalities: Solve Algebraically and Graphically.	9.1 - 9.4	3
Review		3
Exams		4
	<b>Total</b>	<b>70</b>

The approximate hours per chapter are guidelines and are at the discretion of the instructor. The instructor is responsible for making assignments and scheduling examinations. The Final Exam date is scheduled by the Registrar.

#### MA-010 Homework Problems

Additional problems will be assigned from the Chapter Review Exercises, Cumulative Review Exercises, and Chapter Posttests at the end of each chapter.

<u>Section</u>	<u>Pages</u>	<u>Problems</u>
1.1	7-8	5,9,15,17,21,25,27,37,43,49,55,57,61,67
1.2	13-16	7,11,19,27,37,47,51,63,73,75,81,87,91
1.3	22,23	7,13,17,27,37,39,43,47,51,57,63,67
1.4	28,29	3,5,13,19,25,33,35,41,45,47,51
1.5	33,34	11,25,33,39,57,69,89,101,115
1.6	41-45	3,7,9,19,25,33,41,51,55,63,71,77,81,85,97,105, 113,115,117
1.7	52-56	9,19,21,23,33,37,39,59,63,73,77,83, 93,103,109,123,135,141,143
1.8	63-66	3,5,17,19,21,25,31,33,37,43,47,49
2.1	81,82	1, 5,7,21,25,35,37,47
2.2	89-92	27,35,37,47,59,75,85,95,103,105,119,125,127,135
2.3	97-100	7,9,13,15,17,19,23,25,35,45,59,61,63,65,67
3.1	126-133	5,13,25,37,41,47,61,73,75,77,95,105,115,135,143,151,155
3.2	140-144	5,15,25,27,35,39,45,55,65,85,87,113
3.3	150-153	11,13,15,19,29,41,47,55
3.4	158-160	5,11,13,19,21,23,29,37
3.5	165-167	1,3,5,9,11,13,23,29,33
4.1	195,196	1,5,9,13,17,25,29,33,37,41,49,53
4.2	199, 200	5,15,25,35,45,55,65
4.3	205-208	5,15,25,35,45,55,65,75,87,95,103,107
4.4	215-218	5,7,15,25,41,45,55,65,75,85,97,101,107,109,115,121
4.5 a	221	5,7,9,13,15,17,21
5.1	241,242	5,13,17,25,29,37
5.2	247-250	5,15,25,35,45,83,85,95,105
5.3	255-258	7,11,15,25,35,39,41,47,55
5.4	263-266	5,11,15,25,35,37,51,67,95,115
5.5	271-274	15,25,31,35,39,45,55,63,67,79
6.1	293-296	5,7,9,15,17,25,35,45,59,65,71
6.2	299, 300	5,15,25,35,41,47
6.3	306-309	5,9,15,25,27,35,45,55,57,65,71
6.5	317, 318	3,7,11,15,19,25,27,33,35
6.6	323-326	5,9,15,19,21,23,31,35,39
6.7	329, 330	3,5,7,13,17,21,25,29,33,37
10.1	485, 486	5,7,9,15,21,27,35,45,55
10.2	489, 490	5,9,11,15,25,35
10.3	495, 496	3,5,7,9,15
10.4	501, 502	23,27
7.1	361-364	1,5,9,13,15,19,23,27
7.2	371-374	7,15,23,25,29,33
7.3	381-384	1,5,13,17,23,25,27,29,45,53,55,65
8.1	409-412	13,15,19,21,25,29,31
8.2	419-421	11,15,17,23,25,31
8.3	427, 428	3,7,11,13,17,29,33
9.1	451,452	3,11,15,19,23,31,35,37
9.2	457-460	1,5,9,21,27,29,37,45,49,53,61,71,77,81,85
9.3	463, 464	1,5,9,13,19,21,23
9.4	467, 468	1,3,5,7,15,17