BERGEN COMMUNITY COLLEGE
DIVISION OF MATHEMATICS, SCIENCE AND TECHNOLOGY
DEPARTMENT OF DEVELOPMENTAL MATHEMATICS

COURSE SYLLABUS

MAT-048 Algebra

INSTRUCTOR: _____ OFFICE _____

EMAIL: _____ PHONE: _____

COURSE DESCRIPTION   MAT- 048 Algebra is a basic algebra course for students whose placement examination indicates a need for review in algebra and whose program of study requires the completion of MAT -160 Intermediate Algebra. MAT- 048 does satisfy the prerequisite requirement for MAT-160. Topics include signed numbers, variables, literal equations and formulas, square roots, integral exponents, polynomials, linear, quadratic and absolute value equations, rational
expressions, and inequalities.

PREREQUISITES: MAT-011 with a grade of C or better or by Testing

CREDITS/HOURS: 5 credits (non-degree), 5 hours

GEN'L ED COURSE: No

STUDENT LEARNING OUTCOMES: Upon successful completion of this course, students will be able to:
   1. Evaluate arithmetic and algebraic expressions, including exponential expressions, polynomial expressions, rational expressions, and radical expressions
   2. Simplify arithmetic and algebraic expressions, including exponential expressions, polynomial expressions, rational expressions, and radical expressions
   3. Solve equations, including linear equations in one variable, literal equations, absolute value equations, systems of linear equations, and quadratic equations
   4. Solve and graph linear inequalities in one variable
   5. Factor algebraic expressions
   6. Graph linear equations in two variables
   7. Write an equation of a line given certain conditions
   8. Use linear equations in one variable and systems of linear equations in the solution of verbal problems

ASSESSMENT MEASURES: Each of the above listed student learning objectives will be assessed by,
   1. Homework assignments and quizzes
   2. Written examinations
   3. Other, as announced by the instructor

TEXT: MyMathLab Code, by Martin-Gay; Pearson. (includes eBOOK)

ELECTRONIC DEVICES: The Department of Mathematics prohibits the use of cell-phones, PDA's, laptops, headphones, IPODs and other such devices in mathematics classes unless otherwise specified by the grading policy provided by the instructor at the beginning of the semester.

CALCULATOR USAGE: A four function calculator is allowed after the first unit exam.

COURSE OF STUDY:

Topic	Sections
Real Numbers and Introduction to Algebra	8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7
Equations, Inequalities, and Problem Solving	9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, A.2, A.3
Graphing Equations	10.1, 10.2, 10.3, 10.4, 10.5
Systems of Equations	11.1, 11.2, 11.3, 11.4,
Exponents and Polynomials	12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7
Factoring Polynomials	13.1, 13.2, 13.3, 13.4, 13.5, 13.6, A.1
Rational Expressions	14.1, 14.2, 14.3, 14.4, 14.5, 14.6
Roots and Radicals	15.1, 15.2, 15.3, 15.4,
Quadratic Equations	16.1, 16.2, 16.3

GRADING POLICY: Refer to the instructor's grading policy on the course outline distributed during the first class.

❖ All students must take the departmental final exam. The final will count for 25% of the overall grade, but a student who fails to attain a grade of 55% or better on the Final Exam will be unable to receive a passing grade for the course.

❖ Tests and Quizzes will account for no less than 60% of the overall grade.

❖ Grades in the developmental courses will be assigned as follows:

- **A** = 90-100 %
- **B+** = 86-89 %
- **B** = 80-85 %
- **C+** = 76-79 %
- **C** = 70-75 %
- **F** = Below 70 %

BCC Attendance Policy:

All students are expected to attend punctually every scheduled meeting of each course in which they are registered. Attendance and lateness policies and sanctions are to be determined by the instructor for each section of each course. These will be established in writing on the individual course outline. Attendance will be kept by the instructor for administrative and counseling purposes.

Developmental Mathematics Departmental Attendance Policy:

A student who exceeds the allowable maximum number of absences (see chart below) may be given an **"E"** grade. Note: two late arrivals or two early departures will equal one absence. In summer, classes missed may count as double absences.

Courses which meet:	Maximum absences:
15-weeks	6 absences allowed
12-weeks	7 absences allowed
7-weeks	3 absences allowed

EXTRA HELP:

The Henry and Edith Cerullo Learning Assistance Center (CLAC), L-125, is a source of tutorial assistance in understanding operations of basic mathematics and in problem solving. For an exact schedule, call 201-447-7489.
Math Walk-In Center, A113, offers tutorial support in a collaborative setting.
The CLAC at the Meadowlands, Room 202. Tutors are available to aid in the understanding and reinforcement of the course material learned in class. Hours will be posted on the door. For an exact schedule, call (201) 493-4096 or visit http://www.bergen.edu/current-students/tutoring/testing-and-tutoring-at-the-meadowlands

FACULTY ABSENCE PROCEDURE: "CLASS CANCELLATIONS" may be found by clicking on "Current Students" followed by "Class Cancellations" on the Bergen Community College website, www.bergen.edu. A list is also posted in a glass case near A-129, the main corridor on the first floor, in Ender Hall or in the lobby of the Meadowlands Campus.Students may consult these listings before going to class. If a cancelled class is not listed, it should be reported to the Dean's Office (A-325) or the Adjunct Office (C-100).

Students who require accommodations in accordance with the American with Disabilities Act can request these services from the Office of Specialized services. To learn more about how to apply for services, please visit them at http://www.bergen.edu/oss

The BCC food pantry is available to meet the urgent needs of members of our campus community. The Food Pantry provides non-perishable food items, toiletries, and additional support services in an environment that emphasizes discretion and confidentiality. Anyone needing assistance is encouraged to visit HS-100 (Office of Health Services) Monday through Thursday 9am-9pm. Donations will also be accepted in HS-100.

MAT-048 ALGEBRA: CONTENT

MODULE 6 Real Numbers and Introduction to Algebra
8.1   Symbols and Sets of Numbers
8.2   Exponents, Order of Operations, and Variable Expressions
8.3   Adding Real Numbers
8.4   Subtracting Real Numbers
8.5   Multiplying and Dividing Real Numbers
8.6   Properties of Real Numbers
8.7   Simplifying Expressions

MODULE 7 Equations, Inequalities and Problem Solving
9.1   The Addition Property of Equality
9.2   The Multiplication Property of Equality
9.3   Further Solving Linear Equations
9.4   A Further Introduction to Problem Solving
9.5   Formulas and Problem Solving
9.6   Percent Problem Solving
9.7   Linear Inequalities and Problem Solving
A.2   Compound Inequalities
A.3   Absolute Value Equations

MODULE 8 Graphing Equations
10.1   The Rectangular Coordinate System
10.2   Graphing Linear Equations
10.3   Intercepts
10.4   Slope and Rates of Change
10.5   Equations of Lines

MODULE 9 Graphing Equations and Systems of Equations

11.1 Graphing Systems of Equations
11.2   Solving Systems of Linear Equations by Substitution
11.3   Solving Systems of Equations by Elimination
11.4   Solving of Linear Equations and Problem Solving
Direct Translation, Comparison, Perimeter, and Value problems

MODULE 10 Exponents and Polynomials
12.1   Exponents
12.2   Negative Exponents and Scientific Notation
12.3   Introduction to Polynomials
12.4   Adding and Subtracting Polynomials
12.5   Multiplying Polynomials
12.6   Special Products
12.7   Dividing Polynomials (12.7(a) only)

MODULE 11 Factoring Polynomials

    13.1   The greatest Common Factor (and Grouping);

    13.2   Factoring Trinomials of the Form $x^2 + bx + c$

    (13.3   Factoring Trinomials of the Type $ax^2 + bx + c$ By Trial and Error) – Optional

    13.4   Factoring Trinomials of the Type $ax^2 + bx + c$ by Grouping

    13.5   Factoring Perfect Square Trinomials and Difference of Squares

    A.1   Factoring Sums and Difference of Cubes

    13.6   Solving Quadratic Equations by Factoring

MODULE 12 Rational Expressions and Equations

    14.1   Simplifying Rational Expressions

    14.2   Multiplying and Dividing Rational Expressions

    14.3   Adding and Subtracting Rational Expressions with the Same Denominator and Least Common Denominator

    14.4   Adding and Subtracting Rational Expressions with Different Denominators

    14.5   Solving Equations Containing Rational Expressions

    14.6   Rational Equations and Problem Solving

MODULE 13 Roots and Radicals

    15.1   Introduction to Radicals

    15.2   Simplifying Radicals

    15.3   Adding and Subtracting Radicals

    15.4   Multiplying and Dividing Radicals *(Denominator Containing One Term)*

MODULE 14 Quadratic Equations

    16.1 Solving Quadratic Equations by the Square Root Method

    16.2 Solving Quadratic Equations by the Completing the Square

    16.3 Solving Quadratic Equations by the Quadratic Formula

MAT 048
TENTATIVE SCHEDULE Fall 2014
Textbook: Martin-Gay 15-WEEK SCHEDULE

Week 1	**Symbols and Sets of numbers and Exponents and Order of Operations Sections 8.1, 8.2**	**Adding, Subtracting, Multiplying and Dividing Real Numbers Sections 8.3 -8.5**	**Properties of Real Numbers and Simplifying Expressions Sections 8.6, 8.7**
Week 2	**Review**	**Test 1**	**The Addition and Multiplication Property of Equality Sections 9.1, 9.2**
Week 3	**Further Solving of Linear Equations and Introduction to Problem Solving Sections 9.3, 9.4**	**Formulas and Percent Problem Solving Sections 9.5, 9.6**	**Linear Inequalities and Compound Inequalities Sections 9.7, A.2**
Week 4	**Absolute Value Equations/Review Section A.3**	**Test 2**	**Rectangular Coordinate System and Graphing Linear Equations Sections 10.2, 10.2**
Week 5	**Intercepts and Slope Sections 10.3, 10.4**	**Equations of Lines Section 10.5**	**Graphing Systems of Equations Section 11.1**
Week 6	**Solving a Systems of Equations by Substitution and Elimination Sections 11.2, 11.3**	**Solving Applications with Two Variables Section 11.4**	**Review**
Week 7	**Test 3**	**Exponents and Scientific Notation Sections 12.1,12.2**	**Introduction to Polynomials and Adding and Subtracting Polynomials Sections 12.3, 12.4**
Week 8	**Multiplying and Dividing Polynomials Sections 12.5-12.7**	**GCF Factoring and Factor by Grouping Sections 13.1, 13.2**	**Factoring Trinomials Sections 13.2-13.4**
Week 9	**Factoring Perfect Square Trinomials and Difference of Squares Section 13.5**	**Factoring Sums and Differences of Cubes Section A.1**	**Solving Quadratics Equations by Factoring Section 13.6**
Week 10	**Review**	**Test 4**	**Simplifying Rational Expressions Section 14.1**
Week 11	**Multiplying and Dividing Rational Expressions Section 14.2**	**Adding and Subtracting Rational Expression Sections 14.3, 14.4**	**Solving Equations with Rational Expressions Section 14.5**
Week 12	**Rational Equations and Problem Solving Section 14.6**	**Review**	**Test 5**
Week 13	**Introduction to Radicals and Simplifying Radicals Sections 15.1, 15.2**	**Adding, Subtracting, Multiplying and Dividing Radicals Sections 15.3, 15.4**	**Solving Quadratic Equations by Square Root Method and Completing the Square Sections 16.1, 16.2**
Week 14	**Quadratic Formula Section 16.3**	**Review**	**Test 6**
Week 15	**Review**	**Review**	**Final**