

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

COURSE SYLLABUS

MAT-040 Algebra for Liberal Arts

INSTRUCTOR: _____ **OFFICE** _____

EMAIL: _____ **PHONE:** _____

COURSE

DESCRIPTION: MAT- 040 is an algebra course for students whose program of study does not require the completion of MAT - 160 Intermediate Algebra and whose placement score indicates a need for a review of basic algebra. MAT - 040 does satisfy the prerequisite requirement for MAT -130, MAT - 150 and MAT - 155. Topics include signed numbers, variables, integral exponents, linear equations and problem solving, graphing equations, systems of equations and exponents and polynomials.

CREDITS/HOURS: 4 credits (non-degree), 4 hours

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

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, and polynomial expressions.
2. Simplify arithmetic and algebraic expressions, including exponential expressions, and polynomial expressions.
3. Solve linear equations and inequalities in one variable and systems of linear equations.
4. Solve literal equations
5. Graph linear equations in two variables and graph systems of equations.
6. Use linear equations in one variable and systems of linear equations in the solution of verbal problems
7. Add, subtract and multiply polynomials.

**ASSESSMENT
MEASURES:**

Each of the above listed student learning objectives will be assessed by:

1. Written assignments and/or quizzes
2. Written examinations
3. Other, as announced by the instructor.

TEXT:

MyMathLab Code to accompany Developmental Mathematics (2d ed.), by Martin-Gay (Prentice-Hall 2011).

ELECTRONIC DEVICES:

The Department of Developmental 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:

<u>Topic</u>	<u>Sections</u>
Operations on Real Numbers and Algebraic Expressions	8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7
Equations, Inequalities in One Variable	9.1, 9.2, 9.3, 9.7, 9.5
Problem Solving	9.4, 9.6
Introduction to Graphing and Equations of Lines	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

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-040 ALGEBRA FOR LIBERAL ARTS: 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 of 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

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 SYSTEMS OF LINEAR EQUATIONS

- 11.1 Solving Systems of Linear Equations by Graphing
- 11.2 Solving Systems of Linear Equations by Substitution
- 11.3 Solving Systems of Linear Equations by Addition
- 11.4 Systems 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

MAT-040
TENTATIVE SCHEDULE 15 week
Textbook: Developmental Math (2/E) Martin-Gay

Week 1	Intro to Algebra, Success in Math, The Number System and the Real Number Line Section 8.1	Exponents, Order of Operations, and Variable Expressions Section 8.2
Week 2	Adding, Subtracting, Multiplying and Dividing Integers Sections 8.3 – 8.5	Properties of Real Numbers and Simplifying Expressions Sections 8.6, 8.7
Week 3	Review	Test 1
Week 4	Addition and Multiplication Property of Equality Sections 9.1, 9.2	Linear Equations with Fractions and Decimals Section 9.3
Week 5	Problem Solving: (Direct Translation, Geometry, Consecutive Integers) Section 9.4	Literal Equations and Formulas and One-Variable Problem Solving (Motion $D=rt$, Percent, Perimeter, Mixtures) Sections 9.5 and 9.6
Week 6	Linear Inequalities and Compound Inequalities Sections 9.7, A.2	Review
Week 7	Test 2	Rectangular Coordinate System, Graphing Linear Equations Sections 10.1, 10.2
Week 8	Intercepts Section 10.3	Slope and Rate of Change Section 10.4
Week 9	Equation of a Line Section 10.5	Solving a Systems of Linear Equations by Graphing Section 11.1
Week 10	Solving a Systems of Linear Equations by the Substitution and Addition Method Section 11.2, 11.3	Systems of Linear Equations and Problem Solving Section 11.4
Week 11	Review	Test 3
Week 12	Exponent Rules, Zero and Negative Exponents Scientific Notation Sections 12.1, 12.2	Introduction to Polynomials Sections 12.3
Week 13	Adding and Subtracting Polynomials Section 12.4	Multiplying Polynomials Section 12.5
Week 14	Review	Test 4
Week 15	Review	Final Exam