Montgomery County Community College
MAT 011B
Beginning Algebra with Review of Arithmetic
0-4-0

COURSE DESCRIPTION:
This is a first course in algebra with a significant review of arithmetic. The course reviews arithmetic operations with decimals and fractions, measurement and basic geometry. It introduces the beginning concepts of algebra through applications. Algebraic topics include signed numbers, algebraic terminology, basic operations on algebraic expressions and exponents, solution of linear equations and inequalities, simple factoring, algebraic fractions, quadratic equations, slope, graphs of linear and quadratic equations, and word problems. The course is appropriate for students with a weak math background and who need of a review of arithmetic. The TI-30X calculator is recommended for the course.

This precollege level course cannot be used to fulfill a degree requirement nor is it calculated in a student's Grade Point Average (GPA); however, the credits billed will be applied towards a student's financial aid enrollment status and enrollment status reported to the National Student Clearinghouse.

REQUISITE(S):
Previous Course Requirements
* MAT 010 Fundamentals of Arithmetic, or MAT 010B Fundamentals of Arithmetic, with a minimum grade of "C"

Concurrent Course Requirements
None

COURSE COMMENTS
* Arithmetic Accuplacer Test Score of 237 or higher.
* Students placing in this range are required to take MAT 011B. MAT 011 is not a substitute for this course.

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to	LEARNING ACTIVITIES	EVALUATION METHODS
1. Perform basic arithmetic operations involving fractions, decimals, and order of operations and signed numbers.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
2. Compute the volume, area and perimeter of	Lecture Small Group Activities	Homework Quizzes

basic 2 and 3 dimensional objects.	Suggested Calculator Problem Solving Activities	Tests
3. Solve linear, literal and quadratic equations and their applications.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
4. Use the Cartesian coordinate system to graph lines: vertical and horizontal lines, x and y-intercepts, changes to the horizontal and vertical scales of a graph and quadratics.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
5. Appropriately apply slope and understand applications of linear graphs.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
6. Use the calculator appropriately to solve growth and decay problems with exponents, finance problems and scientific notation and apply properties of exponents.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
7. Manipulate and solve multiplication, division, addition, subtraction of algebraic fractions, and fractional equations.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
8. Compute the addition, subtraction and multiplication of polynomials.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
9. Demonstrate the ability to factor common factors, trinomials with a leading coefficient of one, the difference of perfect squares, and solve equations by factoring.	Lecture Small Group Activities Suggested Calculator Problem Solving Activities	Homework Quizzes Tests
LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
10. Demonstrate the ability to apply mathematical	Lecture Small Group Activities	Homework Quizzes

skills to real world applications	Suggested Calculator Problem Solving Activities	Tests

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. Signed Numbers
2. Introduction to Variables
3. Simplifying Algebraic Expressions
4. Solving Equations
5. Applications of Linear Equations
6. Literal Equations
7. Percentages
8. Inequalities
9. Applications of Inequalities
10. Scatter Plots
11. Interpreting Graphs
12. Graphing Lines by Plotting Points
13. Graphing Lines by Finding the Intercepts
14. Introduction to Slope
15. Slope
16. Applications of Linear Graphs
17. Introduction to Positive Exponents
18. Negative Exponents and Scientific Notation
19. Properties of Exponents
20. Introduction to Algebraic Fractions
21. Addition, Subtraction of Algebraic Fractions
22. Solving Equations Containing Fractions
23. Ratio and Proportion Problems
24. Introduction to Quadratics
25. Applications of Quadratic Formula
26. Quadratic Applications and Their Graphs
27. Factoring

LEARNING MATERIALS:

Hofmann, Hunter, and Yankosky. (2016-2017)Be*ginning Algebra*. Pearson Custom Publishing.

Calculator: TI-30XIIS

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by:	Walter R. Hunter, Professor of Mathematics	Date: 4/2005
Revised by:	Walter R. Hunter, Professor of Mathematics	Date: 1/2008
VPAA/Provost Compliance Verification:	Dr. John C. Flynn, Jr.	Date: 9/28/2010
Revised by:	Marion Graziano, Assistant Professor Mathematics	Date: 8/4/2011
VPAA/Provost Compliance Verification:		
	Victoria L. Bastecki-Perez, Ed.D.	Date: 8/5/2011
Revised by:	Marion Graziano	Date: 10/30/2012
VPAA/Provost or designee Compliance Verification:		
	Victoria L. Bastecki-Perez, Ed.D.	Date: 2/18/2013
Revised by:	Marion Graziano/Debbie Dalrymple	Date: 8/2/2017
VPAA/Provost or designee Compliance Verification:		Date: 8/24/2017

This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.