Miami Dade College

MAT0022C Developmental Math C

Course Description: This course combines Developmental Mathematics I and II. The student will learn operations on signed numbers, solving linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, radicals, graphing, and applications. This course does not satisfy the college level mathematics requirements. Placement test scores or referral determine admission. (5-hour lecture)

Course Competency	Learning Outcomes
Competency 1: The student will demonstrate knowledge of place value by:	• Communication • Numbers / Data
1. Identifying place value. 2. Writing numbers using word notation, standard notation, and expanded notation. 3. Rounding whole numbers.	
Competency 2: The student will demonstrate knowledge of whole numbers by:	• Communication • Numbers / Data • Critical thinking • Information Literacy
1. Performing operations with addition, subtraction, multiplication, and division with whole numbers. 2. Solving applications involving operations with whole numbers including area and perimeter. 3. Performing order of operations including absolute value. 4. Evaluating exponents with whole numbers. 5. Classifying sets of numbers. 6. Comparing magnitude of real numbers. 7. Identifying and applying the properties of real numbers.	
Competency 3: The student will demonstrate knowledge of integers by:	• Communication • Numbers / Data • Critical thinking • Information Literacy
1. Performing operations with integers, including applications.	

2. Evaluating exponents with integers. 3. Evaluating absolute value expressions.	
Competency 4: The student will demonstrate knowledge of fractions by:	• Communication • Numbers / Data • Critical thinking • Information Literacy
1. Performing operations with addition, subtraction, multiplication, and division with fractions. 2. Distinguishing between proper fractions, improper fractions, and mixed numerals. 3. Performing operations with addition, subtraction, multiplication, and division with mixed numerals. 4. Solving applications involving operations with fractions.	
Course Competency 5: The student will demonstrate e knowledge of decimals by:	• Communication • Numbers / Data • Critical thinking • Information Literacy
1. Performing operations with addition, subtraction, multiplication, and division with decimals. 2. Rounding decimals. 3. Solving applications involving operations with decimals.	
Course Competency 6: The student will demonstrate knowledge of percent by:	• Communication • Numbers / Data • Critical thinking • Information Literacy • Social Responsibility
1. Using percent notation, fractional notation, and decimal notation interchangeably. 2. Solving applications involving percentages.	
Course Competency 7: The student will demonstrate knowledge of basic geometric figures by:	• Communication • Numbers / Data • Critical thinking • Information Literacy

1. Solving application problems including finding the perimeter of polygons and the circumference of circles. 2. Finding the area of a triangle, parallelograms, and circle. 3. Converting units of measurement within the same measurement system.	
Course Competency 8: The student will demonstrate knowledge of Pre-Algebra by:	• Communication • Numbers / Data • Critical thinking • Information Literacy
1. Setting up and solving ratios and proportions with simple algebraic expressions. 2. Solving linear equations involving the addition and multiplication properties of equality. 3. Defining variables and writing an expression to represent a quantity in a problem. 4. Combining like terms in one variable (e.g., 2x + 5x). 5. Evaluating algebraic expressions (e.g., find the value of 3x when x =2). 6. Solving formulas with given values. 7. Graphing an inequality on a number line.	
Course Competency 9: The student will demonstrate knowledge of signed numbers by:	• Numbers / Data
1.Performing operations with addition, subtraction, multiplication, and division with signed numbers. 2. Applying the order of operations rule. 3. Comparing signed numbers using <, >, ≥, ≤, ≠, or =. 4. Determining the absolute values of signed numbers.	
Course Competency 10: The student will demonstrate knowledge of equations by:	• Communication • Numbers / Data • Critical thinking • Information Literacy • Social Responsibility
1. Solving linear equations in one variable.	

2. Solving linear equations involving fractions and decimals. 3. Solving literal equations for a given variable with applications. 4. Solving applications involving linear equation in one variable (including number problems, geometry problems, and proportion problems).	
Course Competency 11: The student will demonstrate knowledge of linear inequalities by:	
1. Solving linear inequalities in one variable. 2. Graphing solutions of linear inequalities on a number line.	
Course Competency 12: The student will demonstrate knowledge of algebraic expressions by:	• Communication • Numbers / Data • Critical thinking • Information Literacy • Social Responsibility
1. Evaluating expressions, given specific values of the variable. 2. Identifying and combining like terms. 3. Simplifying expressions, by applying the order of operations. 4. Solve application problems involving geometry, including perimeter and area with algebraic expressions.	
Course Competency 13: The student will demonstrate knowledge of polynomials by:	• Numbers / Data
1.Performing operations with addition, subtraction, multiplication and division with polynomials. 2. Applying the rules of exponents to perform operations with polynomials. 3. Converting numbers to scientific notation and changing from scientific notation to decimal form.	
Course Competency 14: The student will demonstrate knowledge of factoring by:	• Numbers / Data • Critical thinking • Information Literacy
1. Factoring out the greatest common factor. 2. Factoring by grouping. 3. Factoring trinomials.	

4. Factoring the difference of two squares. 5. Solving quadratic equations, in one variable, by factoring.	
Course Competency 15: The student will demonstrate knowledge of linear equations in two variables by:	• Numbers / Data • Critical thinking • Information Literacy
1. Graphing linear equations in two variables. 2. Determining the slope of a line (from slope formula, graph and equations). 3. Determining the x-and y-intercepts of a line given the graph of the line or its equation.	
Course Competency 16: The student will demonstrate knowledge of rational expressions by:	• Communication • Numbers / Data • Critical thinking
1. Simplifying a rational expression by factoring. 2. Solving problems involving rates and ratios. 3.Simplify, multiply and divide rational expressions. 4. Add and subtract rational expressions with monomial denominators. 5. Converting units of measurement across measurement systems.	
Course Competency 17: The student will demonstrate knowledge of radical expressions by:	• Communication • Numbers / Data • Critical thinking • Information Literacy • Social Responsibility
1. Simplifying radical expressions using the product rule. 2. Adding, subtracting, and multiplying radicals. 3. Rationalizing the denominator (monomials only). 4. Solving application problems involving geometry (Pythagorean Theorem).	