



## COURSE OUTLINE: MTH121 - ALGEBRA

Prepared: Math Department

Approved: Karen Hudson, Dean, Community Services and Interdisciplinary Studies

<b>Course Code: Title</b>	MTH121: ALGEBRA				
<b>Program Number: Name</b>	1105: GAS - ONE-YEAR 1115: GAS-UNIV TRANSFER				
<b>Department:</b>	MATHEMATICS				
<b>Academic Year:</b>	2023-2024				
<b>Course Description:</b>	In this introductory algebra course students will learn concepts and skills leading to applications. For those planning to enter programs that require technical math, this course establishes a solid foundation. This course is also well suited to those who are entering fields of study where math is not a required component of the curriculum but a working knowledge of algebra is expected. Topics of study include: polynomials, factoring, graphing, solving linear equations and systems, exponents and radicals, and quadratic equations.				
<b>Total Credits:</b>	5				
<b>Hours/Week:</b>	5				
<b>Total Hours:</b>	70				
<b>Prerequisites:</b>	There are no pre-requisites for this course.				
<b>Corequisites:</b>	There are no co-requisites for this course.				
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<b>1105 - GAS - ONE-YEAR</b> VLO 3 Understand and utilize critical thinking processes and problem solving techniques.				
<small>Please refer to program web page for a complete listing of program outcomes where applicable.</small>					
<b>Essential Employability Skills (EES) addressed in this course:</b>	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 10 Manage the use of time and other resources to complete projects.				
<b>Course Evaluation:</b>	Passing Grade: 50%, D  A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.				
<b>Books and Required Resources:</b>	Calculator - Sharp EL-520XTB (Available in Bookstore)				
<b>Course Outcomes and Learning Objectives:</b>	<table border="1"> <thead> <tr> <th>Course Outcome 1</th> <th>Learning Objectives for Course Outcome 1</th> </tr> </thead> <tbody> <tr> <td>1. Use basic algebraic</td> <td>1.1 Operations with Fractions</td> </tr> </tbody> </table>	Course Outcome 1	Learning Objectives for Course Outcome 1	1. Use basic algebraic	1.1 Operations with Fractions
Course Outcome 1	Learning Objectives for Course Outcome 1				
1. Use basic algebraic	1.1 Operations with Fractions				



concepts to solve linear equations.	1.2 Order of Operations 1.3 Algebraic Properties 1.4 Solving One-Step Equations 1.5 Solving Two-Step Equations 1.6 Solving Linear Equations 1.7 Solving Literal Formulas
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Solve systems of linear equations using graphical and algebraic methods.	2.1 Identify equations for lines and recognize different forms 2.2 Compare parallel lines and perpendicular lines 2.3 Solve system of linear equations graphically 2.4 Solve system of linear equations algebraically 2.5 Investigate applications using systems of linear equations 2.6 Solving three dimensional systems of equations
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Understand all operations with polynomials	3.1 Explain the exponent properties 3.2 Explain what is done with negative exponents 3.3 Investigate multiplying and dividing polynomials 3.4 Investigate adding and subtracting polynomials 3.5 Explain special products
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
4. Use a variety of factoring techniques and have ability to recognize them	4.1 Find the Greatest Common Factor (GCF) 4.2 Factor by grouping terms 4.3 Factor basic trinomials ( $a = 1$ ) 4.4 Factor general trinomials 4.5 Factor special products using factoring strategies
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
5. Use factoring techniques to simplify and solve rational expressions and equations.	5.1 Review factoring techniques 5.2 Multiply and divide rational expressions 5.3 Add and subtract rational expressions 5.4 Simplify rational expressions with all operations 5.5 Solve rational expressions
<b>Course Outcome 6</b>	<b>Learning Objectives for Course Outcome 6</b>
6. Solve quadratic equations using a variety of techniques	6.1 Investigate graphs of quadratics 6.2 Solve equations with radicals and exponents 6.3 Solve quadratics by factoring 6.4 Solve quadratics by completing the square 6.5 Investigating solutions using quadratic formula and discriminant

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Assignments	28%
Tests (6)	72%

**Date:**

January 5, 2024

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further



 information.

