



## COURSE OUTLINE: MTH190 - MATH I

Prepared: Mathematics Department

Approved: Bob Chapman, Dean, Health

<b>Course Code: Title</b>	MTH190: MATH I FOR PADD
<b>Program Number: Name</b>	3065: PRE-HEALTH DIP DGR
<b>Department:</b>	PRE-HEALTH
<b>Academic Year:</b>	2024-2025
<b>Course Description:</b>	By the end of this course, students will have demonstrated the ability to evaluate a variety of arithmetic and algebraic expressions and apply these principles to typical situations that arise in health care fields. Concepts studied include numeracy fundamentals, systems of measurement and dimensional analysis, and algebra, with an emphasis on analytical techniques. Linear functions will be studied and students will demonstrate the ability to graph, describe, and evaluate linear functions. Students will develop essential critical thinking and problem-solving skills through exposure to application problems.
<b>Total Credits:</b>	4
<b>Hours/Week:</b>	4
<b>Total Hours:</b>	56
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>This course is a pre-requisite for:</b>	MTH191
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<b>3065 - PRE-HEALTH DIP DGR</b> VLO 3 Solve numeric problems and interpret data related to health sciences and other science-related fields using mathematical concepts, including algebra and probability, along with descriptive and inferential statistics.
<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-531 (available in the bookstore)



**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
1. Numeracy Fundamentals	<p>1.1 Identify numbers in their various forms: whole number, integers, and rational numbers (fractions and decimals).</p> <p>1.2 Identify and correctly use inequality symbols, absolute values, and exact numbers.</p> <p>1.3 Add, subtract, multiply, and divide whole numbers, integers, and rational numbers without a calculator.</p> <p>1.4 Evaluate multi-step mathematical expressions, including exponential and square root expressions, with numbers in their various forms: whole, integers, and rational numbers.</p> <p>1.5 Solve applied problems with numbers in their various forms by applying problem solving strategies and arithmetic skills.</p> <p>1.6 Define and differentiate between accuracy and precision.</p> <p>1.7 Determine the number of significant digits in a measurement, and apply the rules of addition/subtraction and multiplication/division to determine the appropriate number of significant digits in an answer.</p> <p>1.8 Convert numbers between decimal form and scientific notation.</p> <p>1.9 Perform arithmetic operations on numbers in scientific notation.</p> <p>1.10 Solve literal equations for the indicated variable.</p> <p>1.11 Perform ratio/proportion calculations.</p> <p>1.12 Solve percent expressions by equation or proportion.</p> <p>1.13 Convert between ratios, fractions, decimals, and percents.</p> <p>1.14 Solve application problems involving ratios, proportions, and percents.</p> <p>1.15 Utilize metric system prefix names and symbols.</p> <p>1.16 Perform metric system conversions without the use of a conversion chart.</p> <p>1.17 Perform dimensional analysis for US Customary and metric measurement system conversions.</p> <p>1.18 Solve application problems involving perimeter, area, volume and capacity of simple geometric figures.</p>
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Algebra	<p>2.1 Simplify algebraic expressions using the laws of exponents, commutative, associative, and distributive properties.</p> <p>2.2 Evaluate algebraic expressions by substituting known values for the variables.</p> <p>2.3 Divide polynomials by monomials.</p> <p>2.4 Solve linear equations, including rational equations containing constant denominators, for one variable.</p> <p>2.5 Solve word problems by translating verbal phrases into algebraic expressions.</p>
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Linear Equations	<p>3.1 Determine the slope and x-y intercepts algebraically.</p> <p>3.2 Determine the equation of a line given two points or a point and a slope.</p>



3.3 Solve systems of two variable linear equations by graphing, substitution, or addition/subtraction methods.  
3.4 Solve applications involving two variable linear equations.

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Tests	100%

**Date:**

August 19, 2024

**Addendum:**

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

