COURSE OUTLINE: MTH190 - MATH I

Prepared: Mathematics Department
Approved: Greg Farish - Dean
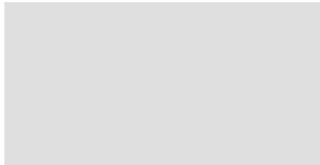
Course Code: Title	MTH190: MATH I FOR PADD
Program Number: Name	3065: PRE-HEALTH DIP DGR
Department:	PRE-HEALTH
Academic Year:	2025-2026
Course Description:	By the end of this course, students will have demonstrated the ability to evaluate a variety of arithmetic and algebraic expressions and apply these 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.
Total Credits:	4
Hours/Week:	4
Total Hours:	56
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	MTH191
Vocational Learning Outcomes (VLO's) addressed in this course: Please refer to program web page for a complete listing of program outcomes where applicable.	**3065 - PRE-HEALTH DIP DGR** 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.
Essential Employability Skills (EES) addressed in this course:	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.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Books and Required Resources:	Calculator - Sharp EL-531 (available in the bookstore)

Course Outcomes and Learning Objectives:	**Course Outcome 1**	**Learning Objectives for Course Outcome 1**
	1. Identify and compare various forms of numbers and evaluate arithmetic expressions without a calculator.	1.1 Identify numbers in their various forms: whole number, integers, and rational numbers (fractions and decimals). 1.2 Identify and correctly use inequality symbols, absolute values, and exact numbers. 1.3 Add, subtract, multiply, and divide whole numbers, integers, and rational numbers without a calculator. 1.4 Evaluate multi-step mathematical expressions, including exponential and square root expressions, with numbers in their various forms: whole, integers, and rational numbers. 1.5 Solve applied problems with numbers in their various forms by applying problem solving strategies and arithmetic skills.
	Course Outcome 2	**Learning Objectives for Course Outcome 2**
	2. Convert between different number notations and different units of measurement and apply the rules for performing calculations with approximate numbers.	2.1 Define and differentiate between accuracy and precision. 2.2 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. 2.3 Convert numbers between decimal form and scientific notation. 2.4 Utilize metric system prefix names and symbols. 2.5 Perform metric system conversions without the use of a conversion chart. 2.6 Perform dimensional analysis for US Customary and metric measurement system conversions.
	Course Outcome 3	**Learning Objectives for Course Outcome 3**
	3. Apply concepts of ratios, proportions, and percentages to simplify expressions and solve problems.	3.1 Perform ratio/proportion calculations. 3.2 Solve percent expressions by equation or proportion. 3.3 Convert between ratios, fractions, decimals, and percentages. 3.4 Solve application problems involving ratios, proportions, and percentages.
	Course Outcome 4	**Learning Objectives for Course Outcome 4**
	4. Simplify algebraic expressions and solve linear equations.	4.1 Simplify algebraic expressions using the laws of exponents, commutative, associative, and distributive properties. 4.2 Evaluate algebraic expressions by substituting known values for the variables. 4.3 Divide polynomials by monomials. 4.4 Solve linear equations, including rational equations containing constant denominators, for one variable. 4.5 Solve word problems by translating verbal phrases into algebraic expressions. 4.6 Solve literal equations for the indicated variable.
	Course Outcome 5	**Learning Objectives for Course Outcome 5**

	5. Analyze linear equations, formulate equations of lines, and solve systems of linear equations.	5.1 Determine the slope and x-y intercepts algebraically. 5.2 Determine the equation of a line given two points or a point and a slope. 5.3 Solve systems of two variable linear equations by graphing, substitution, or addition/subtraction methods. 5.4 Solve applications involving two variable linear equations.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Tests	100%

Date: August 20, 2025

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