COURSE OUTLINE

MTH180

Prepared: Mathematics Department   Approved: Sherri Smith

Course Code: Title	MTH180: MATH I FOR PCD
Program Number: Name	3060: PRE-HEALTH CERT DIPL
Department:	PRE-HEALTH
Semester/Term:	17F
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 problems that arise in the health care fields. Concepts studied include numeracy fundamentals, systems of measurement and dimensional analysis, and algebra, with an emphasis on analytical techniques. Students will develop essential critical thinking and problem-solving skills through exposure to application problems.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
This course is a pre-requisite for:	MTH181
Vocational Learning Outcomes (VLO's): **Please refer to program web page for a complete listing of program outcomes where applicable.**	#3. Solve basic numeric problems and interpret data related to health sciences and other science-related fields using mathematical concepts, including algebra, basic probability and descriptive statistics.
Essential Employability Skills (EES):	#3. Execute mathematical operations accurately. #4. Apply a systematic approach to solve problems. #5. Use a variety of thinking skills to anticipate and solve problems. #10. Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D
Evaluation Process and Grading System:	<table><tr><td>**Evaluation Type**</td><td>**Evaluation Weight**</td></tr><tr><td>Tests</td><td>100%</td></tr></table>

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Course Outcomes and Learning Objectives:

Course Outcome 1.

1. Numeracy Fundamentals

Learning Objectives 1.

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.
1.6 Define and differentiate between accuracy and precision.
1.7 Apply the scientific rules of rounding, determining the number of significant digits in a measurement, and applying the rules of addition/subtraction and multiplication/division to determine the appropriate number of significant digits in an answer.
1.8 Convert numbers between decimal form and scientific notation.
1.9 Perform arithmetic operations on numbers in scientific notation.
1.10 Solve literal equations for the indicated variable.
1.11 Perform ratio/proportion calculations.
1.12 Solve percent expressions by equation or proportion.
1.13 Convert between ratios, fractions, decimals, and percents.
1.14 Solve application problems involving ratios, proportions, and percents.
1.15 Utilize metric system prefix names and symbols.
1.16 Perform metric system conversions without the use of a conversion chart.
1.17 Perform dimensional analysis for US Customary and metric measurement system conversions.
1.18 Solve application problems involving perimeter, area, volume and capacity of simple geometric figures.

Course Outcome 2.

2. Algebra

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Learning Objectives 2.

2.1 Simplify algebraic expressions using the laws of exponents, commutative, associative, and distributive properties.
2.2 Evaluate algebraic expressions by substituting known values for the variables.
2.3 Divide polynomials by monomials.
2.4 Solve linear equations, including rational equations containing constant denominators, for one variable.
2.5 Solve word problems by translating verbal phrases into algebraic expressions.

Course Outcome 3.

3. Linear Equations

Learning Objectives 3.

1.1 Determine the slope and x-y intercepts algebraically.
1.2 Determine the equation of a line given two points or a point and a slope.
1.3 Solve systems of two variable linear equations by graphing, substitution, or addition/subtraction methods.

Date:	Wednesday, August 30, 2017
	Please refer to the course outline addendum on the Learning Management System for further information.