

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: MTH 133

Credits: 3

Course Title: Mathematics for Health Professionals

Course Description: Presents in context the arithmetic of fractions and decimals, the metric system and dimensional analysis, percents, ratio and proportion, linear equations, topics in statistics, topics in geometry, logarithms, and topics in health professions, including dosages, dilutions, and IV flow rates. This course is intended for health professions programs. Prerequisites: Competency in Math Essentials (MTE) 1-3 as demonstrated through the placement and diagnostic tests or by satisfactorily completing the required MTE units or equivalent or Co-requisite: MCR 9. Lecture 3 hours per week.

General Course Purpose: This course prepares students entering radiography, diagnostic medical sonography, nursing, and other related health profession fields.

Course Prerequisites and Co-requisites:

Prerequisites: Competency in Math Essentials (MTE) 1-3 as demonstrated through the placement and diagnostic tests or by satisfactorily completing the required MTE units or equivalent or Co-requisite: MCR 9.

Student Learning Outcomes:

Students will engage in all course content described below in context of the health profession being studied.

Upon completing the course, the student will be able to

1. Demonstrate knowledge of topics in arithmetic
 - Interpret relative value of decimals and perform basic arithmetic of decimals.
 - Interpret relative value of fractions and perform basic arithmetic of fractions.
 - Simplify arithmetic expressions using the order of operation.
 - Calculate powers and roots of numbers.
2. Demonstrate knowledge of topics in measurement and conversions
 - Convert units in the metric system.
 - Use dimensional analysis to convert units between metric, nonmetric, household measures, apothecary measures, and temperatures.
3. Demonstrate knowledge of topics in algebra and graphing
 - Solve linear equations.
 - Solve problems involving percents and ratio proportions.
 - Simplify and solve basic exponential and logarithmic expressions and equations.
 - Graph linear equations.
 - Recognize the characteristics of linear, quadratic, and exponential functions as presented in their graphs
4. Demonstrate knowledge of topics in statistics
 - Interpret data presented in frequency distribution tables, bar graphs or histograms, pie charts, or line graphs.
 - Compute mean, median, mode, and standard deviation for a data set.

5. Demonstrate knowledge of topics in geometry
 - Use geometric formulas to calculate perimeter, area, surface area, volume.
 - Measure angles with a protractor.
 - Solve problems involving angle measure.
6. Solve problems involving dilutions and dosages; reconstituting solutions; and IV flow rates

Major Topics to be Included

1. Arithmetic
2. Measurement and Conversions
3. Algebra and Graphing
4. Statistics
5. Geometry
6. Using Mathematics for Problem-Solving in the Health Professions

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