NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
MTH 133 – MATHEMATICS FOR HEALTH PROFESSIONS (3 CR.)

Course Description

Presents in context the arithmetic of fractions and decimals, the metric system and dimensional analysis, percent's, ratio and proportion, linear equations, topics in statistics, topics in geometry, logarithms, topics in health professions including dosages, dilutions and IV flow rates. This course is intended for programs in the Health Professions. Lecture 3 hours. Total 3 hours per week.

General Course Purpose

This course is intended for students entering degree and certificate programs in a health professions field such as radiography, diagnostic medical sonography, and nursing.

Course Prerequisites/Corequisites

Prerequisite: At least one of MTE units 1 – 3; MDE 10; or other placement methods.

Course Objectives

Upon completing the course, the student will be able to:

- *Communication*
  - *Interpret and communicate quantitative information and mathematical and statistical concepts using language appropriate to the context and intended audience.*
- *Problem Solving*
  - *Make sense of problems, develop strategies to find solutions, and persevere in solving them.*
- *Reasoning*
  - *Reason and draw conclusions or make decisions with quantitative information.*
- *Evaluation*
  - *Critique and evaluate quantitative arguments that utilize mathematical, statistical, and quantitative information.*
- *Technology*
- *Use appropriate technology in a given context.*
- *Students will engage in all course content described below in context to the health professions fields being supported.*
- *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 operations*
  - *Calculate powers and roots of numbers*
- *Topics in Measurement and Conversions*
  - *Solve linear equations.*
  - *Solve problems involving percents and ratio proportions.*
  - *Simplify and solve basic exponential and logarithmic expressions and equations. Include applications pertaining to health professions.*
  - *Graph linear equations.*
  - *Recognize the characteristics of linear, quadratic, and exponential functions as presented in their graphs.*
- *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.*

- *Topics in Geometry*
    - *Use geometric formulas to calculate perimeter, area, surface area, volume.*
    - *Be able to measure angles with a protractor.*
    - *Solve problems involving angle measure.*
- *Topics in Health Professions*
    - *Solve problems involving dilutions and dosages.*
    - *Solve problems involving reconstituting solutions.*
    - *Solve problems involving IV flow rates.*

Major Topics to be Included

a) Basic Arithmetic
b) Measurement and Conversions
c) Algebra and Graphing
d) Statistics
e) Geometry
f) Health Professions Applications