

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY MCR 6 – LEARNING SUPPORT FOR PRECALCULUS I (2 CR.)

Course Description

Provides instruction for students who require minimum preparation for college-level Precalculus. Students in this course will be co-enrolled in MTH 161. Credits not applicable toward graduation and do not replace MTE courses waived. Successful completion of Precalculus I results in the prerequisite MTE modules being satisfied. Lecture 2 hours. Total 2 hours per week.

General Course Purpose

To enable qualified students to enter into credit bearing courses sooner, with the appropriate support, and with equal or better success than those students meeting course prerequisite requirements. The course provides support and enhancement of foundational and course content required of the credit course.

Course Prerequisites/Corequisites

Prerequisite: Completion of any three of the MTE modules 1-3.

Corequisite: MTH 133.

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 allied health 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
 - Convert units in the metric system.
 - Use dimensional analysis to convert units between metric, nonmetric, household measures, apothecary measures, and temperatures.
- 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.
Include applications pertaining to allied health.
- 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 Allied Health
 - Solve problems involving dilutions and dosages.
 - Solve problems involving reconstituting solutions.
 - Solve problems involving IV flow rates.
- To achieve the above objectives, the support course will cover appropriate topics such as those suggested below in both planned review and just-in-time remediation:
- Student Skills Topics
 - Class activities may include:
 - Reviewing notes from class lectures
 - Activities on taking good notes
 - Analyzing personal time management
 - Correcting textbook homework
 - Predicting test questions
 - Correcting tests
 - Preparing for tests
 - Asking good questions
 - Exploring skills for using technology effectively
 - Discussions may include the following topics:
 - Using a planner/electronic device to keep up with assignments
 - What work needs to happen outside of classes
 - How does one use class notes?
 - Why and when is it important to read the text?
 - What does the instructor mean when he/she asks me to show my work?
- Math Skills Topics
 - Operations with fractions, decimals, and integers
 - Order of Operations
 - Exponents involving positive and negative bases
 - Laws of Exponents (including fractional and negative)
 - Evaluating expressions/functions for given values of variables
 - Excel or similar applications
 - Formulas
 - Ratios and Proportions
 - Percent

Major Topics to be Included

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