NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
MTH 152 - MATHEMATICS FOR THE LIBERAL ARTS II (3 CR.)

Course Description

Presents topics in functions, combinatorics, probability, statistics and algebraic systems. Lecture 3 hours per week.

General Course Purpose

The general purpose of this course is to give the student an appreciation for the uses of mathematics in the contemporary world and to develop an ability by the student to solve certain mathematical problems in a logical manner.

Course Prerequisites/Corequisites

Prerequisites: Competency in Math Essentials Units MTE 1-5 as demonstrated through the placement and diagnostic tests, or by completion through unit 5 in an MTT course. A student who provides official evidence of a minimum mathematics score of 520 on the SAT or a minimum score of 22 on the ACT taken within the last two years may register for these courses without taking the math placement test. MTH 151 and MTH 152 do not have to be taken in sequence

Course Objectives

Upon the completion of the course, the student will be able to:

- Analyze data and make inferences from data
- Apply counting principles
- Compute probabilities
- Describe the structure of algebraic systems
- Graph and apply linear functions

Major Topics to be Included

A. Statistics
   1. Organization and display of data
   2. Measures of central tendency, such as mean, median, or mode
   3. Measures of dispersion, such as range, variance, or standard deviation
   4. Normal curve
   5. Samples and populations
   6. Inferential statistics, such as confidence intervals, hypothesis testing, or regression

B. Combinatorics
   1. Counting techniques, such as tree diagrams
   2. Counting principles
      a. Permutations
      b. Combinations

C. Probability
   1. Basic concepts such as theoretical probability, empirical probability, or odds

2. Computation of probabilities
    a. Negation or complement
    b. Sum or union
    c. Conditional

D. Algebraic systems
1. Real number system axioms
2. Systems of linear equations
3. Linear Programming

E. Functions
1. Coordinate geometry
2. Linear functions
    a. Graphing
    b. Applications

F. Optional topics
1. Modular arithmetic
2. Systems such as groups, rings, fields
3. Exponential growth and decay
4. Matrices