MAT 104 – Algebra with Applications

Course Description

This course emphasizes the applications of algebra to a variety of fields, including probability, statistics, and finance. It also covers mathematical modeling and set theory.

Instructional Materials

Smith, Karl J. (2012). *The nature of mathematics* (12th ed.). Belmont, CA: Brooks / Cole (Cengage).

Course Learning Outcomes

1. Describe data using Venn diagrams and the notation of set theory.
2. Solve problems using concepts from set theory and logic.
3. Solve (graphically and algebraically) linear equations.
4. Model data using exponential and logarithmic functions.
5. Apply finance formulas and logarithms to amortize loans and calculate interest.
6. Solve problems involving counting principles, including permutation and combination problems.
7. Compute the probabilities of simple and compound events.
8. Describe data using measures of center and spread.
9. Calculate the standardized values of a normal distribution.
10. Summarize and describe data using numbers and / or graphs.
11. Discuss the concept of a function and / or graphs.