APPLIED ALGEBRA WITH DATA ANALYSIS

MATH 1360

Course Description:

This is an applied algebra course teaching the following topics with an emphasis on data analysis and application: algebraic, exponential, and logarithmic functions; probability and statistics. The course will emphasize data analysis and applications of covered topics in order to demonstrate the relevance of mathematics to solving real-world problems. **3 credits**

Prerequisites:

Students must have an ACT Math sub score of at least 23 within the last 2 years, a COMPASS Test score of at least 4 within the last 2 years, or MATH 1310 within the last 2 years with a grade of C- or better

Overview of content and purpose of the course:

This course will show students how the mathematics of algebra and statistics are incorporated in their field of study; Business, Nursing, Economics, Public Affairs, Media, and Psychology, just to name a few. Beyond manipulating functions and their graphs, this course will focus on how functions and their graphs can be used to approximate or analyze data through examples and class projects. Additionally, the course will discuss the basics of probability and statistics, again, through applications and real-world scenarios. Bringing technology into the curriculum will aid students with their future endeavors to more quickly learn new technologies and incorporate the use of such technologies into the students' careers.

Major topics:

1) Linear Equations and Inequalities in Two Variables

2) Systems of Equations

3) Exponential & Logarithmic Functions

4) Combinatorics (in preparation for probability)

5) Probability

6) Statistics

List of performance objectives stated as student learning outcomes:

1. Graphing and properties of basic functions
2. Applications of functions to real-world scenarios
3. Examination and interpretation of data
4. Using technology to aid in data analysis
5. Using technology to communicate mathematical concepts
6. Finding probabilities of various events
7. Applying statistical methods to real-world scenarios
8. Using technology to find and interpret probabilities and statistics

Textbook: Langkamp, Greg, and Joseph Hull. *Quantitative Reasoning and the Environment, 1st ed*. Upper Saddle River: Pearson, 2006.

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