MATH 130 College Algebra

This course introduces sets, number systems, fractions, polynomials, linear equations in one variable, functions, special functions, exponential and logarithmic functions, equation of a straight line, systems of equations, and mathematics of finance.

(Pre-requisites:)

Course Learning Outcomes:

By the end of the course, students will be able to:

1. Recall the characteristics of exponential and logarithmic functions and use it to analyse and solve Problems of mathematical nature.
2. Give examples of the fundamental concepts of the algebra numbers and polynomials in solving the first and second-degree equations and inequalities, including absolute value.
3. Define the appropriate graphical representations to use to display results effectively. Recognize the algebraic and graphical characteristics of linear equations.
4. Describe ways in which mathematics can be used to real life finance questions.

Textbook & Course Materials:

- Algebra & Trigonometry, 8th ed by Richard N. Aufmann D. Nation

Course Content:

1. Number Systems (Naturals, integers, Irrational numbers, Real number system), Algebraic Properties of Real numbers, Elementary properties of Powers
2. Scientific Notation, Fractions, Reducing Fractions to its lower terms. Addition/subtraction of fractions, Multiplication/Division of Powers. Exponents and Radicals
3. Polynomials, Addition, subtraction, and multiplication of polynomials. Factorization of polynomials. Degree of polynomials
4. Linear Equations in one variable, Solving Equations in one variable, Formation of linear equations, in the solution of problems
5. Quadratic Equations, Inequalities (1st & 2nd degree), Absolute value (Inequalities), Rectangular Coordinate System
6. Rectangular Coordinate System The graph of a function
7. Special functions: Linear Functions Equation of a straight line, Quadratic functions, Algebra of functions Polynomial Functions
8. Exponential and logarithmic functions
9. Systems of Equations
10. Mathematics of finance Simple and compound interest, multiple compounding, future, and present value of an annuity.
11. Amortization Linear and compound amortization