MTH 085 - INTRODUCTORY ALGEBRA
4 Semester Hours

BASIC OUTLINE OF COURSE CONTENT:

- Operations with neg # + properties of operations
- Variable expressions
- Integer exponents and scientific notation
- Linear equations and inequalities in one variable
- Coordinate geometry
- Linear systems of equations in two variables and applications
- Polynomials (if time permits)

Notes: (1) emphasis on problem solving throughout the course. *(2) calculator usage wherever appropriate.*

Suggested Instructional Objectives for MTH085

OPERATIONS WITH NEGATIVE NUMBERS AND PROPERTIES OF OPERATIONS
- Whole numbers
- Integers
- Operations with negative numbers
- Properties of the operations
- Fractions
- Operations with fractions
- Order of operations

VARIABLE EXPRESSIONS
- Definition of a variable
- Like terms
- Writing, evaluating and simplifying expressions with variables.

INTEGER EXPONENTS AND SCIENTIFIC NOTATION
- Rules for Exponents
- Simplifying expressions using exponents
- Multiplication and division with scientific notation

LINEAR EQUATIONS AND INEQUALITIES IN ONE VARIABLE
- Definition of Linear Equation and meaning of a Solution.
- Additive and multiplicative property of equality
- Solution of linear equations: with whole numbers, fractions, decimals, grouping signs.
- Applications
- Definition of inequality in one variable and meaning of a solution.
- Additive and multiplicative property of inequality
- Solution of linear inequalities: with whole numbers, fractions, decimals, grouping signs.
- Compound inequalities.
- Graph of the solution
- Applications

COORDINATE GEOMETRY
- Cartesian Coordinate System, Graphing in the Plane, Equations of Lines.
- Definition of Linear Equation in two variables and meaning of the solution.
- Slope of a line.
- Equation of the line: slope, intersect with axes, horizontal, vertical and parallel lines.
- Graphing Linear Equations
- Application of linear equations

LINEAR SYSTEMS OF EQUATION IN TWO VARIABLES AND APPLICATIONS
- Definition of Linear System of Equation in two variables and meaning of the solution.
- Method for solving Linear System of Equation in two variables, with whole numbers, fractions, decimals, grouping signs:
  - Graphing
  - Substitution
  - Elimination
- Applications.

If time permits:

POLYNOMIALS
- Operations with Polynomials.
- Basic Factoring: Greatest Common Factor, Factoring by grouping, Factoring trinomials, Difference of squares
- Solving Quadratic Equations by Factoring.