MATHEMATICS COURSE OUTLINES/DESCRIPTIONS

Algebra I

- **Variables & Expressions**
  Vocabulary, identifying an algebraic expression, translating between words and expressions, tables and expressions, evaluating expressions, the distributive property, combining like terms
- **Solving Linear Equations**
  Inverse operations, one step Equations, two step equations, multi-step equations, variables on both sides, more equations, transforming formulas
- **Graphing Linear Equations**
  Review of graphing, graphing a linear equation (a table, slope y-intercept, slope, point slope, intercepts), horizontal and vertical lines, parallel and perpendicular lines, writing linear equations, writing equations from given Information
- **Solving Linear Inequalities**
  Key terms, pre-assessment, graphing/writing with one variable, simple inequalities, addition/subtraction, simple inequalities multiplication/division, two-step & multi-step, compound inequalities, special cases of compound inequalities
- **Graphing Linear Inequalities**
- **Systems of Linear Equations & Inequalities**
  Solve systems by graphing, solve systems by substitution, solve systems by elimination, choosing your strategy, writing systems to model situations, solving systems of inequalities
- **Solving & Graphing Absolute Values**
  Review, equations, inequalities, functions
- **Algebraic Exponents & Exponential Functions**
  exponential growth introduction, exponential relationships in tables, equations and graphs, growth, factors and growth rates, exponential decay, rules of exponents
- **Algebraic Roots & Radicals**
  Simplifying perfect square radical expressions, approximating square roots, rational & irrational numbers, radical expressions containing variables, simplifying non-perfect square radicands, simplifying roots of variables, operations with radicals
- **Polynomials Presentation Part 1**
  Definitions of monomials, polynomials and degrees**,** adding and subtracting polynomials**,** multiplying monomials**,** dividing by monomials**,** multiplying a polynomial by a monomial**,** multiplying polynomials**,** special binomial products**,** solving equations by factoring
- **Polynomials Presentation Part 2**
  Factors and GCF, factoring out GCF's, factoring trinomials $x^2 + bx + c$, factoring using special patterns, factoring trinomials $ax^2 + bx + c$, factoring four- term polynomials, mixed factoring, solving equations by factoring
- **Quadratic Equations**
  Key terms, identify quadratic functions, explain characteristics of quadratic functions, graph quadratic functions, transforming quadratic functions, solve quadratic equations by graphing, solve quadratic equations by factoring, solve quadratic equations using square roots, solve quadratic equations by completing squares, solve quadratic equations by using the quadratic formula, the discriminant, solving application problems

- **Probability** *(This notebook appears in both Pre-Algebra and Algebra)*

  Introduction to probability**,** experimental and theoretical**,** word problems**,** fundamental counting principle**,** permutations and combinations**,** probability of compound events**,** probabilities of mutually exclusive and overlapping events**,** complementary events
- **Systematic Listing, Counting & Probability**

  Introduction to probability, experimental and theoretical, word problems, fundamental counting principle, using probability formulas
- **Data & Statistical Analysis** *(This notebook appears in both Pre-Algebra and Algebra)*

  Measures of central tendency, central tendency application problems data displays (frequency tables and histograms, stem-and-leaf plots, box-and-whisker plots, scatter plots and line of best fit, determining the prediction equation), choosing a data display, misleading graphs
- **Open Ended Applications Algebra**

  Number problems, age problems, geometry problems, percent problems, mixture problems, uniform motion problems, work problems, proportionality problems