

## Departmental Syllabus **Math 1530 -- College Algebra**

**Textbook:** Algebra and Trigonometry, 6<sup>th</sup> Edition, by Larson and Hostetler

**Prerequisites:** MATH 15 with a grade of “C” or better or mathematics proficiency level of 15 or above.

**Calculators:** Graphing calculator required; TI-83, 85, or 86 recommended. (NOTE: On occasion, individual instructors may restrict the use of any type of calculator.)

**Course Description:** Equations and inequalities, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, complex numbers, systems of equations. (Together MATH 1530 and MATH 2530 are equivalent to MATH 2450. Students will not receive credit for both MATH 1530 and MATH 2450. MATH 1530 and MATH 2530 may not be taken concurrently.)

### **TOPICS AND SECTIONS TO BE COVERED:**

Limited time should be spent on the following sections from Chapter P:

- P.1 Review of Real Numbers and Their Properties
- P.2 Exponents and Radicals
- P.3 Polynomials and Special Products
- P.4 Factoring
- P.5 Rational Expressions
- P.6 Error and the Algebra of Calculus
  
- P.7 Graphical Representation of Data
  - 1.1 Graphs of Equations
  - 1.2 Linear Equations in One Variable
  - 1.3 Modeling with Linear Equations
  - 1.4 Quadratic Equations
  - 1.5 Complex Numbers
  - 1.6 Other Types of Equations
  - 1.7 Linear Inequalities in One Variable
  - 1.8 Other Types of Inequalities
  
  - 2.1 Linear Equations in Two Variables
  - 2.2 Functions
  - 2.3 Analyzing Graphs of Functions
  - 2.4 A Library of Functions
  - 2.5 Shifting, Reflecting, and Stretching Graphs
  - 2.6 Combinations of Functions
  - 2.7 Inverse Functions

- 3.1 Quadratic Functions
- 3.2 Polynomial Functions of Higher Degree
- 3.3 Polynomial and Synthetic Division
- 3.4 Zeros of Polynomial Functions
- 3.5 Mathematical Modeling (optional)
  
- 4.1 Rational Functions and Asymptotes
- 4.2 Graphs of Rational Functions
- 4.3 Partial Fractions (optional)
  
- 5.1 Exponential Functions and Their Graphs
- 5.2 Logarithmic Functions and Their Graphs
- 5.3 Properties of Logarithms
- 5.4 Exponential and Logarithmic Equations
- 5.5 Exponential and Logarithmic Models
  
- 9.1 Solving Systems of Equations
- 9.2 Two-Variable Linear Systems
- 9.3 Multivariable Linear Systems