Departmental Syllabus
Math 1530 -- College Algebra


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

Calculators: A scientific calculator (such as one of the TI-30 models) or a graphing calculator (such as the TI-83, 84, 85, 86 or the TI-Nspire with TI-84 keypad) is required. For a student who does not already own a graphing calculator, it is recommended that a purchase of a graphing calculator be delayed until after the first class meeting, when an instructor will provide specific calculator requirements for that class. Calculators with Computer Algebra Systems (CAS), (e.g. the TI-89, TI-92 and TI-Nspire with CAS keypad, or their equivalent), are not allowed in any math classes. 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.)

Student Learning Outcomes: Students should be able to:
- apply basic algebra and graphing skills to functions such as rational, logarithmic, and absolute value;
- analyze graphs of these functions;
- solve equations and inequalities involving these functions; and
- solve applied problems using algebra.

Topics and Sections to be Covered:

P.2 Exponents and Radicals
P.3 Polynomials and Special Products (optional)
P.4 Factoring Polynomials
P.5 Rational Expressions
1.1 Graphs of Equations
1.2 Linear Equations in One Variable
1.3 Modeling with Linear Equations
1.4 Quadratic Equations and Applications
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 Parent Functions
2.5 Transformations of Functions
2.6 Combinations of Functions: Composite Functions
2.7 Inverse Functions

3.1 Quadratic Functions and Models
3.2 Polynomial Functions of Higher Degree
3.3 Polynomial and Synthetic Division
3.4 Zeros of Polynomial Functions
3.5 Mathematical Modeling and Variation (optional)

4.1 Rational Functions and Asymptotes
4.2 Graphs of Rational Functions

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 Linear and Nonlinear Systems of Equations
9.2 Two-Variable Linear Systems

If you require an accommodation due to a disability, please make an appointment to see me as soon as possible to discuss arrangements for the accommodations. You will need a Verified Individualized Services and Accommodations (VISA) form from Services for Students with Disabilities.