MATH 118
College Algebra in Context II
Course Objectives

Unit 1: Polynomial Functions

1.1 Identify and graph polynomial functions
1.1.1 Determine if a function is a polynomial function.
1.1.2 Evaluate polynomial functions.
1.1.3 Graph polynomial functions.
1.2 Build polynomial functions
1.2.1 Graph polynomials in factored form.
1.2.2 Construct a polynomial function with given zeros.
1.3 Determine zeros of polynomial functions
1.3.1 Factor polynomials to determine zeros.
1.3.2 Find all zeros of a given polynomial function.
1.4 Solve polynomial applications
1.4.1 Solve polynomial equations and inequalities.
1.4.2 Solve max/min problems.
1.4.3 Compute average rate of change.
1.5 Determine polynomial functions for data sets
1.5.1 Given polynomial data, determine the degree and the model.
1.5.2 Use regression to determine polynomial models.

Unit 2: Rational Functions

2.1 Determine local behavior of rational functions
2.1.1 Evaluate rational functions.
2.1.2 Graph rational functions.
2.2 Determine asymptotic and end-behavior properties of rational functions
2.2.1 Determine horizontal asymptotes.
2.2.2 Determine oblique asymptotes and end behavior.
2.3 Build rational functions
2.3.1 Construct rational functions with horizontal asymptotes.
2.3.2 Construct rational functions with slant asymptotes.
2.4 Solve rational equations and inequalities
2.4.1 Solve rational equations.
2.4.2 Solve rational inequalities.
2.5 Model with rational functions
2.5.1 Solve application problems I.
2.5.2 Solve application problems II.

Unit 3: Radical Functions and Equations

3.1 Graph square root functions
3.1.1 Evaluate square root functions.
3.1.2 Graph and interpret square root functions.
3.2 Graph other root functions
3.2.2 Evaluate radical functions.
3.2.3 Graph and interpret radical functions.
3.3 Solve radical equations
3.3.1 Solve square root equations.
3.3.2 Solve other radical equations.
3.4 Solve radical inequalities
3.4.1 Solve square root inequalities.
3.4.2 Solve other radical inequalities.
3.5 Model with radical functions
3.5.1 Solve radical applications I.
3.5.2 Solve radical applications II.

Unit 4: Power Functions, Operations, and Systems

4.1 Evaluate power functions
4.1.1 Evaluate power functions I.
4.1.2 Evaluate power functions II.
4.2 Graph power functions
4.2.1 Graph power functions I.
4.2.2 Graph power function II.
4.3 Solve equations and inequalities with power functions
4.3.1 Solve equations with power functions.
4.3.2 Solve inequalities with power functions.
4.4 Solve power function applications
4.4.1 Solve applications with power functions.
4.4.2 Solve applications with power regression.
4.5 Solve systems with nonlinear functions
4.5.1 Solve systems with nonlinear functions algebraically.
4.5.2 Solve systems with nonlinear functions graphically.