

M CC118
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.