

Math 1314 College Algebra Course Document

Credit Hours

Three semester hours

Transferability

Most Texas colleges consider this course to be college level, but there are colleges in the United States that do not consider this course college level. If you are concerned about the transferability of this course you should contact the counseling center or the college / university to which you will transfer.

Prerequisites

Math 0310 Intermediate Algebra or Placement Testing or Instructor / Departmental Approval

Course Description

Absolute value equations and inequalities, graphing skills, inverse functions, logarithmic and exponential functions, polynomial and rational functions, piece-wise defined functions, theory of equations and matrices.

Textbook / Materials

Required Textbook and Basic Scientific Calculator

Learning Outcomes

- Evaluate a function from its graph, formula or equation.
- Determine if a relation is a function and state its domain and range given the graph or equation.
- Perform algebraic operations and compositions with functions.
- Categorize basic functions given their graphs or equations.
- Graph the inverse of a function whose graph is given.
- Solve logarithmic, exponential, absolute value, radical and miscellaneous higher order equations.
- Solve polynomial and rational inequalities.
- Graph rational, polynomial, piecewise, exponential and logarithmic functions and selected inverse functions.
- Use symmetry and transformations to sketch graphs.
- Solve linear and nonlinear systems of equations.
- Set up and solve applications involving functions and relations.

Required Textbook and Sections

College Algebra, 10/E

Margaret L. Lial, John Hornsby, David I. Schneider

Publisher: Addison-Wesley, Copyright: 2009

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- 1.1 Linear Equations. (review)
- 1.2 Applications and Modeling with Linear Equations.
- 1.3 Complex Numbers. (review)
- 1.4 Quadratic Equations.
- 1.5 Applications with Quadratic Equations.
- 1.6 Other Types of Equations and Applications.
- 1.7 Inequalities.
- 1.8 Absolute Value Equations and Inequalities.

- 2.1 Rectangular Coordinates and Graphs. (review)
- 2.3 Functions.
- 2.4 Linear Functions.
- 2.5 Equations of Lines; Curve Fitting.
- 2.6 Graphs of Basic Functions.
- 2.7 Graphing Techniques.
- 2.8 Function Operations and Composition.

- 3.1 Quadratic Functions and Models.
- 3.5 Rational Functions

- 4.1 Inverse Functions.
- 4.2 Exponential Functions.
- 4.3 Logarithmic Functions.
- 4.4 Evaluating Logarithms / Change-of-Base Theorem.
- 4.5 Exponential and Logarithmic Equations.
- 4.6 Applications and Models of Exponential Growth.

- 5.1 Systems of Linear Equations.
- 5.5 Nonlinear Systems of Equations.