

Spring 2016

Syllabus for Math 134 – Precalculus: Elementary Functions (2)

Course Description: Algebra review, functions with special attention to polynomial, rational, exponential and logarithmic functions, composed and inverse functions, techniques of graphing. Credit not allowed for 134 and 140, or 134 and 161. Pre: 2 years high school algebra, 1 year plane geometry. Grade Options: CR/NC or Audit.

Course Format: The class meets twice a week for two hours. One hour will lecture, the following hour will be supervised small group work.

Final Exam: There will be a common final exam for all sections of 134.

Topics:

Weeks 1–4:

1. Section 1.1: Graphs and Graphing Utilities.
2. Section 1.2: Linear Equations and Rational Equations.
3. Section 1.3: Models and Applications.
4. Section 1.5: Quadratic Equations.
5. Section 1.6: Other Types of Equations.
6. Section 1.7: Linear Inequalities and Absolute Value Inequalities
7. Section 1.4: Complex Numbers (Optional).
8. Midterm Exam 1

Weeks 5–8:

1. Section 2.1: Basics of Functions and Their Graphs
2. Section 2.2: More on Functions and Their Graphs
3. Section 2.3: Linear Functions and Slope

4. Section 2.4: More on Slope
5. Section 2.5: Transformations of Functions
6. Section 2.6: Combinations of Functions; Composite Functions
7. Section 2.7: Inverse Functions
8. Section 2.8: Distance and Midpoint Formulas; Circles
9. Midterm Exam 2

Weeks 9–12:

1. Section 3.1: Quadratic Functions
2. Section 3.2: Polynomial Functions and Their Graphs
3. Section 3.3: Dividing Polynomials; Remainder and Factor Theorems
4. Section 3.4: Zeros of Polynomial Functions
5. Section 3.5: Rational Functions and Their Graphs
6. Section 3.6: Polynomial and Rational Inequalities
7. Section 3.7: Modeling Using Variation
8. Midterm Exam 3

Weeks 13–15:

1. Section 4.1: Exponential Functions
2. Section 4.2: Logarithmic Functions
3. Section 4.3: Properties of Logarithms
4. Section 4.4: Exponential and Logarithmic Equations
5. Section 4.5: Rational Functions and Their Graphs

The Final Exam is cumulative.

Course Objectives and Student Learning Outcomes: Upon successful completion of Math 134, the student will be able to work with, apply, and answer questions pertaining to the material in the list of topics at the level of a standard "College Algebra" text.

Program Objectives: The successful student will acquire the skills prerequisite to Math 203, Calculus for Business and Social Sciences, and Math 140, Precalculus.