

# math109 Syllabus

## Math 109: Pre-Calculus Algebra

**Text:** *College Algebra & Trigonometry*, Julie Miller and Donna Gerken, McGraw Hill, 2017.

**Prerequisite:** Minimum ACT math score of 23, Math 103/104 or 105 with a minimum grade of C.

**ALEKS is required. A TI-83, TI-84, or TI-Nspire (not CAS version) graphing calculator is required.**

### Sections and Topics

- Sec 2.3: Functions and Relations
- Sec 2.4: Linear Equations in Two Variables and Linear Functions
- Sec 2.5: Applications of Linear Equations and Modeling
- Sec 2.6: Transformation of Graphs
- Sec 2.7: Analyzing Graphs of Functions and Piecewise-Defined Functions
- Sec 2.8: Algebra of Functions and Function Composition
- Sec 1.3 Complex Numbers
- Sec 1.4 Quadratic Equations
- Sec 3.1: Quadratic Functions and Applications
- Sec 3.2: Introduction to Polynomial Functions
- Sec 3.3: Division of Polynomials and the Remainder and Factor Theorems
- Sec 3.4: Zeros of Polynomials
- Sec 4.1: Inverse Functions
- Sec 4.2: Exponential Functions
- Sec 4.3: Logarithmic Functions
- Sec 4.4: Properties of Logarithms
- Sec 4.5: Exponential and Logarithmic Equations and Applications
- Sec 4.6: Modeling with Exponential and Logarithmic Functions
- Sec 3.5: Rational Functions
- Sec 3.6 Polynomial and Rational Inequalities
- Sec 9.1: Systems of Linear Equations in Two Variables and Applications
- Sec 9.2: Systems of Linear Equations in Three Variables and Applications
- Sec 10.1: Solving Systems of Linear Equations Using Matrices

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