

Precalculus Syllabus

Textbook: UGA version of David Cohen's textbook

* Topics covered only in the intensive sections or in greater depth in the intensive sections

Week One

- * Sets of Real Numbers
- * Interval Notation
- * Absolute Value: definition, equations, inequalities
- * Integer Exponents
- * Geometry, separate handout
- * Radicals: simplifying, operations with, and rationalizing numerators and denominators

Week Two

- * Rational exponents
- * Polynomials: operations with
- * Factoring
- * Fractional expressions: simplifying, operations with, simplifying simple complex fractions

Week Three

- * Solving linear equations, solving rational equations with equivalent linear equations
- * Quadratic Equations
Rectangular Coordinates, distance formula, midpoint formula, equations of circles
- * Basic graphs: linear, absolute value, quadratic, rational, square root, cubic, cube root intercepts, and symmetry

Week Four

- Equations of lines
- Quadratic equations, literal, discriminant
- * Other types of equations: absolute value, factorable polynomials, power equations, fractional exponent equations, radical equations with a single radical
- * Inequalities: linear and absolute value

Week Five

- * Setting up applications
Graphing polynomial and simple rational equations, asymptotes, characteristics of graphs

Week Six

- Polynomial and rational inequalities
- Definition of a function, domain, range, difference quotient
- Graphs of functions: vertical line test, average rate of change
- Translations and reflections of graphs

Week Seven
Combining functions: arithmetical operations and compositions
Inverse functions

Week Eight
Quadratic functions
Setting up functions, applications
Maximum and minimum value applications

Week Nine
Exponential Functions
Logarithmic Functions

Week Ten
Graphs of exponential and logarithmic functions
Properties of logarithms
Basic exponential and logarithmic equations
Compound Interest Applications

Week Eleven
Exponential growth and decay applications
Trigonometric functions of acute angles

Week Twelve
Right Triangle applications
Trigonometric functions of angles
Radians
Applications with radians including arc length and area of sectors

Week Thirteen
Trigonometric Functions of real numbers
Graphs of Trigonometric Functions

Week Fourteen
Addition Formula

Week Fifteen
Inverse Trigonometric Functions
Law of Sines

Week Sixteen
Law of Cosines