

Math Curriculum Checksheet

Transfer and General Education courses at Central Arizona College consist of a four semester, four credit hours per semester, sequence:

- MAT081 Basic Arithmetic
- MAT091 Introduction to Algebra
- MAT121 Intermediate Algebra
- MAT151 College Algebra

The fourth course, MAT151 College Algebra is transferrable to the universities. Course descriptions and contents follow:*

Basic Arithmetic:

Students who will take only one math course need practical math, so this course contains a variety of topics in math useful for business and vocational areas. Topics include the following:

- Problem Solving
- Integers
- Fractions
- Decimals
- Estimating
- Order of Operations
- Using Calculators and Computers
- Accuracy and Precision
- Rate, Ratio and Proportion
- Percent
- Measurement
- Area and Volume
- Pythagorean Theorem
- Similar Triangles
- Using Formulas
- Solving Equations
- Statistics

Introduction to Algebra

The first semester in Introduction to Algebra, introduces mathematical tools and functions through measuring, collecting, and analyzing data; linear and quadratic systems of equations; and expressing math concepts. Topics include the following:

- Pattern recognition
- Reasoning
- Number Sequences
- Properties of Numbers
- Using Calculators and Computers
- Solving Equations and Inequalities
- Scientific Notation
- Data Collection and Analysis
- Graphing
- Functions
- Modeling Linear Functions
- Direct and Inverse Variation
- Exponents
- Quadratic functions
- Factoring
- Linear Systems
- Rational Expressions
- Roots and Radicals

Intermediate Algebra

The second semester Intermediate Algebra course introduces formal statistics, probability, exponentials, and math modeling. Topics include the following:

- Real Numbers
- Producing and Analyzing Data
- Probability
- Linear Equations and Inequalities
- Absolute Value
- Mathematical Models
- Polynomials
- Rational Expressions
- Quadratic Equations
- Complex numbers
- Linear Systems
- Inverse Functions
- Density and Concentration
- Applications of Percent
- Exponential growth and decay
- Logarithms

College Algebra

The final semester of MAT151 College Algebra, builds on the previous semesters, using the concepts in a capstone series of projects. Students create systems thinking models and run simulations based on math models. Topics include the following:

- Producing and Analyzing Data
- Number Magnitude and Scientific Notation
- Measurement
- Functions and Graphs
- Rate of Change
- Linear Models
- Composite Functions
- Exponential Models
- Logarithmic Models
- Logistic Models
- Arithmetic and Geometric Series
- Linear Systems and Matrices
- Complex Models
- Systems Simulations

*These lists include only those concepts that are introduced during each course. All topics are cumulative and applied in subsequent courses.