

# Mathematics Developmental (MAT)

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## **MAT 0920. Math Fundamentals. (3 Credits)**

Prerequisite(s): Appropriate placement by a placement exam (within two years).

Designed for students requiring basic math review. Reviews basic operations with whole numbers and fractions. Includes basic operations involving decimals, percents, ratios, rates, and basic operations involving physical measurements. Lab access fee of \$3 applies.

## **MAT 0950. Foundations for Algebra. (4 Credits)**

Prerequisite(s): One of the following (within two years): MAT 0920 with a grade of C- or higher; or appropriate placement by a placement exam.

Designed for students requiring basic math and pre algebra instruction. Covers basic operations for number systems up to and including real numbers. Includes fractions, ratios, proportions, decimals, exponents, roots, linear equations, and polynomial expressions.

May be delivered online.

Lab access fee of \$3 applies.

## **MAT 0980. Beginning Algebra. (5 Credits)**

Prerequisite(s): Appropriate placement (within two years) by a placement exam or a grade of C- or better in MAT 0920

Focuses on building a conceptual understanding of the definitions and operations of algebraic expressions and equations. Introduces students to numerical and algebraic topics, including real numbers and sets; radicals; variables, expressions, and equations; linear equations and inequalities in one variable; tables, charts and graphs; linear equations and systems of linear equations in two variables; polynomials; and quadratic equations in two variables. Prepares students for function and graphing based mathematical reasoning of MAT 1010 (Intermediate Algebra) or MAT 1015 (Intermediate Algebra with Integrated Review). Lab access fee of \$3 applies.

## **MAT 0990. Introductory Algebra. (4 Credits)**

Prerequisite(s): One of the following (within two years): MAT 0950 or MAT 0980 with a C- or higher; or appropriate placement by a placement exam

For students who have completed a minimum of one year of high school algebra or who lack a thorough understanding of basic algebra principles.

Teaches integers, solving equations, polynomial operations, factoring polynomials, systems of equations and graphs, rational expressions, roots, radicals, complex numbers, quadratic equations and the quadratic formula. Prepares students for MAT 1010, Intermediate Algebra.

Lab access fee of \$3 applies.

## **MAT 1010. Intermediate Algebra. (4 Credits)**

Prerequisite(s): One of the following (within two years): MAT 0980 or MAT 0990 with a grade of C- or higher; or appropriate placement by a placement exam.

Uses an in-depth function and graphing based approach to teach Intermediate Algebra and focuses on conceptual understanding as well as algebraic skill. Covers linear, polynomial, quadratic, exponential, logarithmic and rational, functions from algebraic and graphical perspectives. Extends students' mathematical reasoning practice to a collegiate and academic approach in mathematical thinking. Prepares students for MAT 1030, STAT 1040, MATH 1050 and MATH 1090.

## **MAT 1015. Intermediate Algebra with Integrated Review. (5 Credits)**

Prerequisite(s): (within department time limits): MAT 0980 with a C- or higher or appropriate placement by a placement exam.

Reviews core concepts and skills in arithmetic and basic algebra. Uses an in-depth function and graphing based approach to teach Intermediate Algebra and focuses on conceptual understanding as well as algebraic skill. Covers linear, polynomial, quadratic, exponential, logarithmic and rational, functions from algebraic and graphical perspectives. Extends students' mathematical reasoning practice to a collegiate and academic approach in mathematical thinking. Prepares students for MAT 1030, STAT 1040, MATH 1050 and MATH 1090.

## **MAT 101R. Individualized Mathematics Review. (1 Credit)**

Prerequisite(s): Any MAT or MATH course

Designed as a follow-up to MATH 100R for students who desire to make further progress in their math placement through individualized instruction.

Includes a diagnostic test of mathematical knowledge base which is used to develop an individualized learning plan. Provides targeted intervention to increase foundational mathematics knowledge. May be Graded Credit/No Credit. May be repeated for a maximum of 3 credits.

## **MAT 1020. Numeracy. (4 Credits)**

Uses real-life, scenario-based instruction where each mathematical concept is taught using small, useful, real-life mathematical scenarios. Uses a modelling approach to help students determine in which real-life scenario they would use which mathematical concept or skill for solving problems.

Covers models of integers, fractions, decimals, percentages and percentage change, ratio and rate, basic descriptive statistics, charts, and graphs, linear growth, and exponential growth. Demonstrates mathematics as a tool for modeling specific real-life situations. Uses calculators, computer software, and the Internet, and that they are used as tools for understanding. Prepares students for MAT1030, Quantitative Reasoning.

## **MAT 1030. Quantitative Reasoning QL. (3 Credits)**

Prerequisite(s): One of the following (within department time limits): MAT 1020 (preferred), or MAT1015 or MAT 1010 with a grade of C- or higher; or appropriate placement by a placement exam.

Teaches how to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions.

**MAT 1035. Quantitative Reasoning with Integrated Algebra QL. (6 Credits)**

Prerequisite(s): One of the following (within department time limits): MAT 0950 with a grade of C- or higher, or MAT 0980 with a grade of C- or higher, or appropriate placement by a placement exam.

Teaches students to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions. Provides the necessary algebraic content taught in context.

**MAT 103H. Quantitative Reasoning QL. (3 Credits)**

Prerequisite(s): One of the following (within department time limits): MAT 1010 or MAT1015 with a grade of C- or higher; or appropriate placement by a placement exam.

Teaches how to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions. Covers the material at an honors level.

**MAT 1110. Introduction to Mathematical Reasoning. (3 Credits)**

Cross-listed with: PHIL 1110

Prerequisite(s): One of the following (within department time limits): MAT 1010, MAT 1015, MAT1030 or higher, or STAT 1040 or higher, with a grade of C- or higher.

Focuses on the ability to reason soundly and formulate arguments in mathematics, logic and philosophy. Covers how sound arguments and good reasoning methods allow us to effectively search for the truth regarding any mathematical or philosophical question. Covers the reasoning methods used in mathematics and the way the methods are applied outside of mathematics in areas such as language and the sciences. Describes how these methods are effective in producing mathematical knowledge and understanding as well as their epistemic shortcomings. Includes reasoning with propositional logic, sound argumentation, mathematical proof, visualization and diagrammatic reasoning, the role of rigor and intuition, and the scientific application of mathematics.

**MAT 240R. Math Mentor Leadership Practicum. (2 Credits)**

Prerequisite(s): One of the following (within department time limits): MAT 1010, MAT 1015, MAT 1030, or MAT 1035 with a B+ or higher.

Provides the theoretical base and hands-on training in leadership and math mentoring techniques as well as an understanding of and ability to apply listening, teaching, and leadership competencies. Assists student leaders in further developing their own self-awareness, learning skills and strategies, and explores methods for facilitating these in others. Provides an avenue for goal development, fulfillment and performance among student leaders and the individuals they serve. Emphasizes building relationships with students, teaching life skills and learning strategies, and guiding students through the college experience. May be repeated for a maximum of 8 credits towards graduation.