

Course Outline for MATH 1000, Transition to College Algebra

MATH 1000 Transition to College Algebra (1 unit)

Prerequisite: Appropriate Math Placement. Concurrent: MATH 900.

A first course in college algebra with built-in review of basic algebra skills. Real and complex numbers, exponents and radicals. Polynomial operations and factoring. Modeling with equations and inequalities. Linear and quadratic functions and their graphs. Credit/No Credit grading only. 1 lecture.

Course Learning Objectives	
1	Perform operations with real and complex numbers.
2	Use the rules for exponents to simplify exponential expressions.
3	Solve simple and compound linear inequalities and represent the solution using interval notation.
4	Convert between standard numbers and scientific notation.
5	Add, subtract, multiply, divide and factor polynomials.
6	Simplify, add, subtract, multiply, and divide rational expressions and expressions containing radicals.
7	Solve linear and quadratic equations.
8	Construct models to solve problems.
9	Determine the slope of a line and find the equation of a line using given information.
10	Use the language and notation of functions.
11	Represent and interpret basic functions using graphs.

Expanded Course Content

Textbooks, materials, and/or other resources
Intermediate Algebra, 10th Edition, by Jerome E. Kaufmann and Karen L. Schwitters

Week	Readings	Topics of Discussion
1	Sections 1.0, 1.1, 1.2	Review of fractions, sets, real numbers and numerical expressions, operations with real numbers
2	Sections 1.3, 1.4, 2.1	Properties of real numbers and the use of exponents, algebraic expressions, solving first-degree equations
3	Sections 2.2, 2.3, 2.4	Equations involving fractional forms and decimals, problem solving, formulas
4	Sections 2.5, 2.6, 2.7	Inequalities, problem solving with inequalities, equations and inequalities involving absolute value
5	Sections 3.1, 3.2, 3.3	Sums and differences of polynomials, products and quotients of monomials, multiplying polynomials
6	Sections 3.4, 3.5, 3.6	Factoring: greatest common factor and common binomial factor, difference of two squares and sum or difference of two cubes, factoring trinomials
7	Sections 3.7, 4.1, 4.2	Equations and problem solving, simplifying rational expressions, multiplying and dividing rational expressions
8	Sections 4.3, 4.4, 4.6	Adding and subtracting rational expressions, more on rational expressions and complex fractions, fractional equations
9	Sections 4.7, 5.1, 5.2	Applications of fractional equations, using integers as exponents, roots and radicals
10	Sections 5.3, 5.4, 5.5	Combining and simplifying radicals that contain variables, products and quotients involving radicals, equations involving radicals
11	Sections 5.6, 5.7, 6.1	Merging exponents and roots, scientific notation, complex numbers
12	Sections 6.2, 6.3, 6.4	Quadratic equations, completing the square, quadratic formula
13	Sections 6.5, 6.6, 7.1	Applications of quadratic equations, quadratic and other nonlinear inequalities, rectangular coordinate systems and linear equations
14	Sections 7.3, 7.4, 7.5	Distance and slope, determining the equation of a line, graphing nonlinear equations
15	Sections 8.2, 9.1, 9.2	More parabolas and some circles, relations and functions, graphs of functions

Method of Assessment

The possible methods of assessment are written individual examinations, quizzes, in-class worksheets or presentations, projects, and homework. All exams are to be proctored in-person, and one or more midterms and a cumulative final exam are required.

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Instructional Mode

The instructional mode for this class is face-to-face. This designation means that the essential academic standards of the course require in-class student engagement, and thus remote instruction is not appropriate.