

# MATHEMATICS (804)

Information provided includes course descriptions by subject only. For complete 2018-2019 programs/academic plans, please refer to Academic Programs (<http://catalog.blackhawk.edu/academics>).

## 804-107 College Mathematics

**Credits:** 3

This course is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. Topics include performing arithmetic operations and simplifying algebraic expressions, solving linear equations and inequalities in one variable, solving proportions and incorporating percent applications, manipulating formulas, solving and graphing systems of linear equations and inequalities in two variables, finding areas and volumes of geometric figures, applying similar and congruent triangles, converting measurements within and between U.S. and metric systems, applying Pythagorean Theorem, solving right and oblique triangles, calculating probabilities, organizing data and interpreting charts, calculating central and spread measures, and summarizing and analyzing data.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 40 or COMPASS Pre-Algebra Skills, 044 or ACT Math, 17 or Test Waived-College Degree or 834-109 or 834-109) or (AccuPlacer Arithmetic, 089 or (AccuPlacer Arithmetic, 065 and AccuPlacer Elem Algebra, 030))

Complete Course Listing

## 804-110 Elementary Algebra with Applications

**Credits:** 3

This course offers traditional algebra topics with applications. Learners develop algebraic problem solving techniques needed for technical problem solving and for more advanced algebraic studies. Topics include linear equations, exponents, polynomials, rational expressions, and roots and radicals. Successful completion of this course prepares learners to succeed in technical mathematics courses.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 40 or COMPASS Pre-Algebra Skills, 044 or ACT Math, 17 or Test Waived-College Degree or 834-109 or 834-109)

Complete Course Listing

## 804-112

**Credits:** 3

This course is intended to introduce the individual to basic data collection, analysis and presentation techniques. The use of descriptive statistics as well as sampling, probability, and decision-making models will be covered. Data reliability will also be addressed. This course is intended as an introduction to basic statistics with an emphasis on current, real world applications.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** ACT Math, 14

Complete Course Listing

## 804-113 College Technical Mathematics 1A

**Credits:** 3

Topics include: solving linear, quadratic, and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the applications of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 45 or Compass Algebra, 046 or ACT Math, 20 or 804-110 or 834-110 or (AccuPlacer Arithmetic, 089 and AccuPlacer Elem Algebra, 050))

Complete Course Listing

## 804-114 College Technical Mathematics 1B

**Credits:** 2

This course is a continuation of College Technical Mathematics 1A. Topics include: measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Successful completion of or concurrent enrollment in College Technical Mathematics 1A is required for course enrollment. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** 804-113

Complete Course Listing

## 804-115 College Technical Mathematics 1

**Credits:** 5

Topics include: solving linear, quadratic, and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; trigonometric functions on the unit circle; and operations on polynomials. Emphasis will be on the application of skills to technical problems.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 45 or Compass Algebra, 046 or ACT Math, 20 or 804-110 or 834-110 or (AccuPlacer Arithmetic, 089 and AccuPlacer Elem Algebra, 50))

Complete Course Listing

## 804-118 Intermediate Algebra with Applications

**Credits:** 4

This course offers algebra content with applications. Topics include properties of real numbers, order of operations, algebraic solution for linear equations and inequalities, operations with polynomial and rational expressions, operations with rational exponents and radicals, algebra of inverse, logarithmic and exponential functions.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 45 or Compass Algebra, 046 or ACT Math, 20 or 804-110 or 834-110 or (AccuPlacer Arithmetic, 089 and AccuPlacer Elem Algebra, 050))

Complete Course Listing

**804-123 Math with Business Applications****Credits:** 3

This course covers...real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Reading Skills, 39 or COMPASS Reading Skills, 073 or ACT Reading, 16 or AccuPlacer Reading Comp, 076 or Test Waived-College Degree or 809-198 or 809-199 or 838-104 or 838-104 or 801-195 or 801-136 or 801-196 or 801-198 or 804-133 or 806-110 or 806-112 or 806-118 or 806-134 or 806-139 or 806-154 or 806-177 or 806-186 or 806-194 or 806-199 or 809-103 or 809-166 or 809-172 or 809-188 or 809-195 or 809-143 or 809-196 or 809-198) and (ASSET Numerical Skills, 40 or COMPASS Pre-Algebra Skills, 044 or ACT Math, 17 or Test Waived-College Degree or 834-109 or 834-109) or (AccuPlacer Arithmetic, 089 or (AccuPlacer Arithmetic, 065 and AccuPlacer Elem Algebra, 030))  
Complete Course Listing

**804-133 Math and Logic****Credits:** 3

Students will apply mathematical problem solving techniques. Topics will include symbolic logic, sets, algebra, Boolean algebra, and number bases.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 40 or COMPASS Pre-Algebra Skills, 044 or ACT Math, 17 or Test Waived-College Degree or 834-109 or 834-109) or (AccuPlacer Arithmetic, 089 or (AccuPlacer Arithmetic, 065 and AccuPlacer Elem Algebra, 030)) and (COMPASS Reading Skills, 073 or ACT Reading, 16 or ASSET Reading Skills, 39 or AccuPlacer Reading Comp, 076 or Test Waived-College Degree or 838-104 or 838-104 or 801-195 or 801-136 or 801-196 or 801-198 or 806-110 or 806-112 or 806-118 or 806-134 or 806-139 or 806-154 or 806-177 or 806-186 or 806-194 or 806-199 or 809-103 or 809-166 or 809-172 or 809-188 or 809-195 or 809-143 or 809-196 or 809-198 or 809-199)  
Complete Course Listing

**804-189 Introductory Statistics****Credits:** 3

Students taking Introductory Statistics display data with graphs, describe distributions with numbers perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 45 or Compass Algebra, 046 or ACT Math, 20 or 804-106 or 804-107 or 804-118 or 804-110 or 834-110 or (AccuPlacer Arithmetic, 089 and AccuPlacer Elem Algebra, 050))  
Complete Course Listing

**804-196 Trigonometry w Apps****Credits:** 3

Topics include circular functions, graphing of trigonometry functions, identities, equations, trigonometric functions of angles, inverse functions, solutions of triangles complex numbers, DeMoivre's Theorem, polar coordinates, and vectors.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (ASSET Numerical Skills, 49 or Compass Algebra, 066 or ACT Math, 23 or 804-110)  
Complete Course Listing

**804-304 Mathematic Fundamentals****Credits:** 2

This course consists of instructional units that incorporate hands on activities and projects. It is intended to give students a review of the basic principles of arithmetic, including whole numbers, fractions, and decimals. Estimation of length, angles and mathematical results is also covered. Additional topics include ratios, proportions, powers, analyzing graphs and an introduction to algebra. Proper calculator usage will be discussed throughout the course.

**Aid Code:** 31 - One-year Technical Diploma.

**Pre-requisites:** (ASSET Numerical Skills, 35 or COMPASS Pre-Algebra Skills, 025 or ACT Math, 15 or AccuPlacer Arithmetic, 050 or Test Waived-College Degree or 854-781 or 854-781 or 854-782 or 854-782 or 854-783 or 854-783 or 854-784 or 854-784 or 854-785 or 854-785 or 854-786 or 854-786 or 854-787 or 854-787)  
Complete Course Listing

**804-306 Shop Mathematics I****Credits:** 2

This course includes the basic principles of arithmetic beginning with whole numbers and common fractions, and continuing through decimals, percentages, ratios, proportions and averages, measurements, use of constants and coordinate systems. These principles are applied to typical shop problems throughout the course.

**Aid Code:** 31 - One-year Technical Diploma.

**Pre-requisites:** (ASSET Numerical Skills, 35 or COMPASS Pre-Algebra Skills, 025 or ACT Math, 15 or AccuPlacer Arithmetic, 050 or Test Waived-College Degree or 854-781 or 854-781)  
Complete Course Listing

**804-308 Shop Mathematics II****Credits:** 2

This course is a continuation of Shop Mathematics I and includes the study of the properties of circles, volumes and surface areas of various solids, an introduction to practical algebra and trigonometric principles used in solving right triangles as well as applications of the sine and cosine law in solving oblique triangles.

**Aid Code:** 31 - One-year Technical Diploma.

**Pre-requisites:** 804-306  
Complete Course Listing

**804-501****Credits:** 1

**Aid Code:** 50 - Apprentice.  
Complete Course Listing