

# MATHEMATICS (804)

## 804-107 - College Mathematics

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; summarizing and analyzing data. (Prerequisite: Test score required to register) Credit for Prior Learning Available

3 Credit hours

54 Lecture hours

## 804-118 - Intermediate Algebra With Applications

This course offers algebra content with applications and an introduction to functions and complex numbers. Content builds upon the arithmetic of real numbers by using variable equations to solve problems. Topics include graphing and finding algebraic solutions for linear equations and inequalities, quadratic, exponential, polynomial, radical, and rational equations. (Prerequisite: Test score required to register)

4 Credit hours

72 Lecture hours

## 804-123 - Math with Business Applications

Integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes. (Prerequisite: Test score required to register)

3 Credit hours

54 Lecture hours

## 804-181 - Calculus 2

Continues the study of analytic geometry and calculus. Topics included in this course are l'Hôpital's rule, applications of Integration, differentiation and integration of transcendental functions, various techniques of integration, Infinite Sequences and Series, conic sections, polar cylindrical and spherical coordinates, and multiple integration. (Prerequisite: 804-198 Calculus 1)

4 Credit hours

72 Lecture hours

## 804-189 - Introductory Statistics

Introduces techniques to display data with graphs, describe distributions with numbers, perform correlation and regression analyses, and design experiments. Uses probability and distributions to make predictions, estimate parameters, and test hypotheses. Draws inferences about relationships including ANOVA. An A or B in Algebra II or higher in high school within the past 5 years is strongly recommended. (Prerequisite: Test score required to register) Credit for Prior Learning Available

3 Credit hours

54 Lecture hours

## 804-195 - College Algebra with Applications

This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. (Prerequisite: Test score required to register) Credit for Prior Learning Available

3 Credit hours

54 Lecture hours

## 804-196 - Trigonometry with Applications

Topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors. (Prerequisite: 804-195 College Algebra with Applications)

3 Credit hours

54 Lecture hours

## 804-197 - College Algebra and Trigonometry with Applications

This course covers those skills needed for success in Calculus and many application areas on a baccalaureate level. Topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities (linear and nonlinear), relations and functions, systems of equations and inequalities (linear and nonlinear), matrices, graphing, conic sections, sequences and series, combinatorics, and the binomial theorem. (Prerequisite: Test score required to register)

5 Credit hours

90 Lecture hours

## 804-198 - Calculus 1

Introduction to differential and integral calculus and plane analytic geometry; Limits, derivatives, and graphs of algebraic, trigonometric, exponential, and logarithmic functions; antiderivatives, the definite integral, and the fundamental theorem of calculus, with applications.

Students may attempt to test into Calculus through the Accuplacer AAF test. Students should talk with their advisor. There may be an additional \$15 fee. (Prerequisite: Test score required to register). Credit for Prior Learning Available

4 Credit hours

72 Lecture hours

## 804-199 - Calculus 2

Continues the study of differential and integral calculus and plane analytic geometry; introduction to differential equations, differentiation and integration of transcendental functions, improper integrals and integration techniques, conic sections and polar coordinates, infinite sequences and series, power series, and Taylor's formula. (Prerequisite: 804-198 Calculus 1)

4 Credit hours

72 Lecture hours

## 804-360 - Occupational Mathematics 1

Develops skills in arithmetic (whole numbers, fractions, decimals, and integers) via both manual and calculator-assisted calculations. Students solve applied problems related to metalworking occupations using ratios, percentages, proportions, measurement conversions, basic algebra, and introductory geometry and trigonometry. (Prerequisite: Test score required to register) Credit for Prior Learning Available

2 Credit hours

72 Lecture hours

**804-361 - Occupational Mathematics 2**

Develops skills in algebra, geometry, and trigonometry. Students solve applied problems related specifically to the metalworking and machining occupations. Algebra topics include tolerance relationships, speeds and feeds calculations, and precision applications. Geometry topics emphasize circles, chords, and arcs. Trigonometry calculations include right triangle calculations off of actual design prints, and basic oblique triangle calculations. (Prerequisite: 804-360 Occupational Mathematics 1)  
Credit for Prior Learning Available

2 Credit hours

72 Lecture hours

**804-363 - Algebraic Applications for Electrical Trades**

Develops skills to apply scientific and engineering notations to gas and electrical formulas. Students will calculate dimensions using basic trigonometry and the Pythagorean Theorem. Students will analyze single phase and three phase transformers. This course is for Electricity and Electrical Power Distribution program students. Recommend completion of 804-360 Occupational Mathematics 1 before enrolling in this course.

2 Credit hours

72 Lecture hours

**804-582 - Mathematics 1**

Applies principles of arithmetic and algebra as a foundation to metalworking and machining occupations. Must be a state-contracted apprentice to enroll in this course.

1 Credit hours

36 Lecture hours

**804-583 - Mathematics 2**

Applies algebraic terms, expressions, equations and formulas. Includes geometric principles, trigonometry, chords and angles to solve problems related to metalworking. Must be a state-contracted apprentice to enroll in this course. (Prerequisite: 804-582 Mathematics 1)

1 Credit hours

36 Lecture hours

**804-584 - Mathematics 3**

Applies principles of algebra, geometry and trigonometry using right triangles to solve shop-related quality measurements. Toolmakers, die makers and machine tool operators solve problems related to shop situations. Must be a state-contracted apprentice to enroll in this course. (Prerequisite: 804-583 Mathematics 2)

1 Credit hours

36 Lecture hours

**804-585 - Mathematics 4**

Applies trade solutions to related physical concepts. Toolmakers, die makers and machine tool operators solve problems related to numerous trade situations. Must be a state-contracted apprentice to enroll in this course. (Prerequisite: 804-584 Mathematics 3)

1 Credit hours

36 Lecture hours