

# MATHEMATICS (MAT)

## **MAT 0120 | Math for Clinical Calculations Support**

Lecture Credit: 1

Supports skill development necessary for success within Math for Clinical Calculations.

**Corequisite:** MAT 1120

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0140 | Career Math Support**

Lecture Credit: 1

Supports skill development necessary for success within Career Math.

**Corequisite:** MAT 1140

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0150 | Technical Mathematics Support**

Lecture Credit: 1

Supports skill development necessary for success within Technical Mathematics.

**Corequisite:** MAT 1150

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0160 | Financial Mathematics Support**

Lecture Credit: 1

Supports skill development necessary for success within Financial Mathematics.

**Corequisite:** MAT 1160

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0220 | Integrated Math I Support**

Lecture Credit: 1

Supports skill development necessary for success within Integrated Math I.

**Corequisite:** MAT 1220

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0240 | Mathematics for Liberal Arts Support**

Lecture Credit: 2

Supports skill development necessary for success within Math for Liberal Arts.

**Corequisite:** MAT 1240

*Note: This course is taught as a Supplemental Academic Instruction (SAI) course.*

## **MAT 0250 | Quantitative Literacy**

Lecture Credit: 4

Develops number sense and critical thinking strategies, introduce algebraic thinking, and connect mathematics to real world applications. Topics in the course include ratios, proportions, percents, measurement, linear relationships, properties of exponents, polynomials, factoring, and math learning strategies. This course prepares students for Math for Liberal Arts, Statistics, Integrated Math, and college level career math courses.

## **MAT 0260 | Introduction to Statistics Support**

Lecture Credit: 2

Supports skill development necessary for success within Introduction to Statistics.

**Corequisite:** MAT 1260

## **MAT 0300 | Algebraic Literacy**

Lecture Credit: 4

Develops algebraic skills necessary for manipulating expressions and solving equations. Topics in the course include radicals, complex numbers, polynomials, factoring, rational expressions, quadratic equations, absolute value equations, systems of linear equations in two variables, related applications, and linear inequalities. This course prepares students for College Algebra and Finite Math.

## **MAT 0320 | Finite Mathematics Support**

Lecture Credit: 2

Supports skill development necessary for success within Finite Mathematics.

**Corequisite:** MAT 1320

## **MAT 0340 | College Algebra Support**

Lecture Credit: 2

Supports skill development necessary for success within College Algebra.

**Corequisite:** MAT 1340

## **MAT 1075 | Special Topics**

Provides students with a vehicle to pursue in depth exploration of special topics of interest.

*Note: Special topics courses range from 0-12 credits and vary in learning type. Please see your program chair for more information about your options.*

## **MAT 1085 | Independent Study**

Independent Study Credit: 0-12

Provides an opportunity for the highly-motivated student to engage in intensive study and research on a specified topic under direction of a faculty member

## **MAT 1120 | Math for Clinical Calculations**

Lecture Credit: 3

Covers the mathematical calculations needed for enteral and parenteral medication administration. It is designed for students in the health disciplines. Topics include measurements, conversion between various systems of measurements, and methods of solving problems related to drug dosage and medication administration.

**Prerequisite:** College Readiness in Career Math (CCD.edu/CollegeReady)

## **MAT 1140 | Career Math**

Lecture Credit: 3

Covers material designed for career and technical students who need to study particular mathematical topics. Topics include measurement, algebra, geometry, statistics, and graphs. These are presented at an introductory level and the emphasis is on applications.

**Prerequisite:** College Readiness in Career Math (CCD.edu/CollegeReady)

## **MAT 1150 | Technical Mathematics**

Lecture Credit: 4

Covers mathematical material designed for career and technical students. Topics include measurement, algebra, geometry, trigonometry, and vectors. These are presented at an introductory level and the emphasis is on applications.

**Prerequisite:** College Readiness in Career Math (CCD.edu/CollegeReady)

## **MAT 1160 | Financial Mathematics**

Lecture Credit: 3

Covers the fundamentals of financial mathematics. Topics include pricing, taxes, insurance, interest, annuities, amortization, and investments.

**Prerequisite:** College Readiness in Career Math (CCD.edu/CollegeReady)

**MAT 1220 | Integrated Math I: GT-MA1**

Lecture Credit: 3

Engages students in the concepts underlying elementary level mathematics. The course emphasizes critical thinking and applications. Topics include the structure of number systems, an analysis of numerical operations, set properties, numerical and geometric patterns, and a variety of problem solving skills. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Quantitative Literacy Math (CCD.edu/CollegeReady)

*Note: This course is designed for students who are seeking an A.A. degree with an emphasis in education.*

**MAT 1230 | Integrated Math II: GT-MA1**

Lecture Credit: 3

Engages students in the concepts underlying elementary level mathematics. The course emphasizes critical thinking and applications. Topics include probability, statistics, measurement, Euclidean geometry, and algebraic methods. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Quantitative Literacy Math (CCD.edu/CollegeReady)

*Note: This course is designed for students who are seeking an AA degree with an emphasis in education.*

**MAT 1240 | Math for Liberal Arts: GT-MA1**

Lecture Credit: 4

Highlights connections between mathematics and the society in which we live and is intended for liberal arts majors. Topics include set theory and logic, mathematical modeling, probability and statistical methods, and consumer mathematics. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Quantitative Literacy Math (CCD.edu/CollegeReady)

**MAT 1260 | Intro to Statistics: GT-MA1**

Lecture Credit: 3

Introduces descriptive and inferential statistics, with an emphasis on critical thinking and statistical literacy. Topics include methods of data collection, presentation and summarization, introduction to probability concepts and distributions, and statistical inference of one and two populations. This course uses real world data to illustrate applications of a practical nature. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Quantitative Literacy Math (CCD.edu/CollegeReady)

**MAT 1320 | Finite Mathematics: GT-MA1**

Lecture Credit: 4

Covers topics including functions, matrix algebra, linear programming, and an introduction to probability and counting techniques. Emphasis is on applications. This course may include other topics such as statistics when time permits. This course is primarily intended for business, life science, or social science majors. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Algebra (CCD.edu/CollegeReady)

**MAT 1340 | College Algebra: GT-MA1**

Lecture Credit: 4

Focuses on a variety of functions and the exploration of their graphs. Topics include: equations and inequalities, operations on functions, exponential and logarithmic functions, linear and non-linear systems, and an introduction to conic sections. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** College Readiness in Algebra (CCD.edu/CollegeReady)

**MAT 1400 | Survey of Calculus: GT-MA1**

Lecture Credit: 4

Includes derivatives, integrals, and their applications, with attention restricted to algebraic, exponential, and logarithmic functions for business, life science and/or social science majors. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 1340 with a grade of C or better, or appropriate test scores

*Note: This class is for business students, not science/engineering students.*

**MAT 1420 | College Trigonometry: GT-MA1**

Lecture Credit: 3

Explores trigonometric functions, their graphs, inverse functions and identities. Topics include: trigonometric equations, solutions of triangles, trigonometric form of complex numbers, and polar coordinates. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 1340 with a grade of C or better, or appropriate test scores

**MAT 1440 | Pre-Calculus: GT-MA1**

Lecture Credit: 5

Extends algebraic concepts and explores the subject of trigonometry. Topics include: polynomial, rational, logarithmic, and exponential functions, trigonometric and inverse trigonometric functions and their graphs, trigonometric identities, and applications. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 1340 with a grade of C or better, or appropriate test scores

**MAT 2075 | Special Topics**

Provides students with a vehicle to pursue in depth exploration of special topics of interest.

*Note: Special topics courses range from 0-12 credits and vary in learning type. Please see your program chair for more information about your options.*

**MAT 2085 | Independent Study**

Independent Study Credit: 0-12

Provides an opportunity for the highly-motivated student to engage in intensive study and research on a specified topic under direction of a faculty member

**MAT 2410 | Calculus I: GT-MA1**

Lecture Credit: 5

Introduces single variable calculus and analytic geometry. It includes limits, continuity, derivatives, and applications of derivatives as well as indefinite and definite integrals and some applications. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 1420 or MAT 1440 with a grade of C or better, or appropriate test scores

**MAT 2420 | Calculus II: GT-MA1**

Lecture Credit: 5

Continues the study of single variable calculus which will include techniques of integration, analytic geometry, improper integrals, convergence of infinite numerical series and power series. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 2410 with a grade of C or better

**MAT 2430 | Calculus III: GT-MA1**

Lecture Credit: 4

Focuses the traditional subject matter of the Calculus. Topics include vectors, vector-valued functions, and multivariable calculus including partial derivatives, multiple integrals, line integrals and application. This course is on of the Statewide Guaranteed Transfer courses. GT-MA1

**Prerequisite:** MAT 2420 with a grade of C or better

**MAT 2431 | Calculus III with Engineer Applications: GT-MA1**

Lecture Credit: 5

Focuses on the traditional subject matter of multivariable Calculus with an additional emphasis on word problems and problem solving. Topics include vectors, vector-valued functions, partial derivatives, analytic geometry, multiple integrals, line integrals, Stokes', Divergence Theorems and Green's Theorems, and applications. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 2420 with a grade of C or better

**MAT 2540 | Linear Algebra**

Lecture Credit: 3

Explores vector spaces, matrices, linear transformations, matrix representation, eigenvalues, and eigenvectors.

**Prerequisite:** MAT 2420 with a grade of C or better

**MAT 2560 | Differential Equations: GT-MA1**

Lecture Credit: 3

Explores techniques of problem solving and applications. Topics include first, second, and higher order differential equations, series methods, approximations, systems of differential equations, and Laplace transforms. This course is one of the Statewide Guaranteed Transfer courses. GT-MA1

**Prerequisite:** MAT 2420 with a grade of C or better

**MAT 2561 | Differential Equations with Engineering Applications: GT-MA1**

Lecture Credit: 4

Introduces ordinary differential equations. Topics include first, second, and higher order differential equations, series methods, approximations, systems of differential equations, and Laplace transforms with an additional emphasis on engineering applications and problem solving. Appropriate technology related to the mathematical field may be used as a component of the course. This is a statewide Guaranteed Transfer course in the GT-MA1 category.

**Prerequisite:** MAT 2430 or MAT 2431 with a grade of C or better

**MAT 2562 | Differential Equations with Linear Algebra**

Lecture Credit: 4

Explores ordinary differential equations with an introduction to select topics in linear algebra. Course covers first and second order differential equations, series solutions, Laplace transforms, linear algebra, eigenvalues, first order systems of equations, and numerical techniques for solving differential equations.

**Prerequisite:** MAT 2420 with a grade of C or better