MATHEMATICS (MATH)

MATH 0900 Elementary Algebra (3 Credits)
This course is intended for students who would like to improve their understanding of fundamental algebraic concepts before beginning college-credit-level mathematics. In this course, students will review arithmetic with real numbers, use algebraic expressions and equations to model real-world phenomena, solve linear equations of one variable, graph linear equations of two variables, and solve systems of linear equations involving two variables. Students will also develop their technical reading and notetaking skills. Credit does not fulfill degree requirements and is not transferable outside the Connecticut State Community College.
Prerequisites: Placement by multiple measures. Students who do not have college-level placement are encouraged to participate in a pre-term transitional strategy.

MATH 0900I Elementary Algebra Intensive (6 Credits)
This course is intended for students who would like to improve their understanding of fundamental algebraic concepts before beginning college-credit level mathematics. In this course, students will review arithmetic with real numbers, use the algebraic expressions and equations to model real-world phenomena, solve linear equations of one variable, graph linear equations of two variables, and solve systems of linear equations involving two variables. Students will also develop their technical reading and note taking skills. In this intensive form, this course embeds additional support into MATH 0900 including a concentrated review of arithmetic. Credit does not fulfill degree requirements and is not transferable outside the Connecticut Community College system.

MATH 0901 Quantitative Reasoning Support (3 Credits)
This course provides corequisite support for students who are also enrolled in MATH 1100. Support topics include learning strategies, prerequisite skills for MATH 1100, and reinforcement of topics in MATH 1100. Support topics will be taught in a just-in-time format so that they are delivered to the student in the same order and at the same time as the corresponding topics in MATH 1100. Taken with MATH 1100, this course emphasizes quantitative skills needed to be an engaged citizen. Critical thinking and problem solving are emphasized along with the application of mathematics to real-world scenarios requiring reasoning from evidence. Students will learn to communicate effectively with numbers and use technology to enhance their quantitative reasoning ability. Credit does not fulfill degree requirements and is not transferable outside the Connecticut Community College system.
Prerequisites: MATH 0900I/MATH 0900 with a grade of D- or higher OR placement using multiple measures
Corequisite: MATH 1100

MATH 0902 Statistics Support (3 Credits)
This course provides corequisite support for students who are also enrolled in MATH 1200 or MATH 1201. Support topics include learning strategies, prerequisite skills for MATH 1200 and MATH 1201, and reinforcement of topics in MATH 1200 and MATH 1201. Support topics will be taught in a just-in-time format so that they are delivered to the student in the same order and at the same time as the corresponding topics in MATH 1200 and MATH 1201.Taken with MATH 1200 and MATH 1201, this course develops student's numeracy, proportional reasoning, algebra, critical reading, statistical reasoning, and problem-solving skills. Activities will center on data analysis and enhance student's ability to use mathematics to solve problems and provide students just-in-time support for statistics concepts. This course requires the use of computer-based statistical software.Credit does not fulfill degree requirements and is not transferable outside the Connecticut Community College system.
Prerequisites: MATH 0900I/MATH 0900 with a grade of D- or higher OR placement using multiple measures

MATH 0906 College Algebra Support (3 Credits)
This course provides corequisite support for students who are also enrolled in MATH 1600. Support topics include learning strategies, prerequisite skills for MATH 1600, and reinforcement of topics in MATH 1600. Support topics will be taught in a just-in-time format so thatthey are delivered to the student in the same order and at the same time as the corresponding topics in MATH 1600.Taken with MATH 1600, this course provides an in-depth study of the properties of algebraic, exponential, and logarithmic functions as needed for calculus. Emphasis is on using algebraic and graphical techniques for solving problems involving linear, quadratic, piece-wise defined, rational, polynomial, exponential and logarithmic functions. The use of mathematics specific technology to support understanding of the College Algebra course is required.Credit does not fulfill degree requirements and is not transferable outside the Connecticut Community College system.
Prerequisites: MATH 0900I/MATH 0900 with a grade of C- or higher OR MATH 1010 with a grade of D- or higher OR placement using multiple measures

MATH 0987 Intermediate Algebra Support (2 Credits)
This course provides corequisite support in mathematics for students enrolled in MATH 1010. Topics will parallel topics being studied in MATH 1010 and the course will provide support for the essential quantitative skills needed to be successful in MATH 1010. Taken with MATH 1010, the course will provide support for algebra and mathematical modeling of functions and relations represented by tables, graphs, words, and symbols. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. It will also provide additional instruction as well as structured support for study skills, time management, and technology skills. This course cannot be taken alone and does not fulfill the mathematics general education requirement nor can it be used for the mathematics requirement of any program or certificate.
Prerequisites: MATH 0900I/MATH 0900 with a grade of C or higher OR placement using multiple measures
Corequisite: MATH 1010

MATH 0993 Medical Mathematics (1 Credits)
This course includes a study of fractions, decimals, percentages, proportions, dimensional analysis, measurement systems, recording drug administration, dosage calculations, IV calculations, IV piggyback delivery calculations, body weight conversions, and drip rate calculations. This course does not fill a math requirement. Credit does not fulfill degree requirements and is not transferable outside the Connecticut Community College system.

MATH 1000 Mathematics of Finance (3 Credits)
An elementary course covering a wide range of mathematics commonly used in business and personal finance. Topics include simple and compound interest, present value, wages, taxes, insurance, and marketing and retailing mathematics. This course may not transfer but can be used to satisfy the mathematical requirements for certain programs and certificates.
Prerequisites: MATH 0900I/MATH 0900 with a grade of D- or higher OR placement using multiple measures
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 103

MATH 1001 Quantitative Literacy (3 Credits)
A survey course to develop the abilities to interpret and reason with information that involves mathematical ideas or numbers. This course will prepare students for the mathematics they will encounter in other college courses and in their career, as well as help develop critical thinking and problem-solving skills needed in all areas of life. Topics include principles of reasoning, problem-solving techniques, statistical reasoning, numbers in the real world, and personal financial management. This course may not transfer but can be used to satisfy the mathematical requirements for certain programs and certificates.
Prerequisites: MATH 0900I/MATH 0900 with a grade of D- or higher OR placement using multiple measures
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 104, MAT* 109, MAT* 135

MATH 1002 Math for Science and Technology (3 Credits)
This is a first course covering topics from intermediate algebra and trigonometry with technical applications. Topics include units of measurement and dimensional analysis, fundamental concepts of algebra, functions and graphs, right triangle trigonometry and applications. This course may not transfer but can be used to satisfy the mathematical requirements for certain programs and certificates.
Prerequisites: MATH 0900I/MATH 0900 with a grade of C or higher OR placement using multiple measures
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 115

MATH 1003 Descriptive Statistics (3 Credits)
This course will demonstrate the fundamental nature of mathematics and its applications in modern life through an introduction to the concepts of statistics. Topics include random sampling, survey and experimental design, types of data. elementary probability, examining numbers and data critically, graphing and data analysis, and simulation. The use of mathematics specific technology to support understanding is required. This course may not transfer but can be used to satisfy the mathematical requirements for certain programs and certificates. While this course covers similar topics to MATH 1200, they are addressed at a lower level.
Prerequisites: Placement using multiple measures.
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 123

MATH 1004 Math for Elementary Education: Algebra/Number Systems (3 Credits)
This course presents mathematical reasoning for problem solving, sets, whole numbers, numeration systems, number theory, and integers. The use of mathematics specific technology to support understanding of the concepts is required.
Prerequisites: Placement using multiple measures or
MATH 0900I or MATH 0900 with a grade of C- or higher, and eligibility for ENG 1010
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT *141 /MAT* 143

MATH 1010 Intermediate Algebra (3 Credits)
This course is a further study of algebra and mathematical modeling of functions and relations represented by tables, graphs, words, and symbols. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on modeling and applications for all topics. The use of mathematics specific technology to support understanding of the concepts is required.
Prerequisites: Grade of C- or in higher in MATH 0900I or MATH 0900 or placement using multiple measures
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 136, MAT* 137, MAT* 138, MAT* 139

MATH 1011 Applied Algebra with Modeling (3 Credits)
An introduction to algebraic reasoning through quantitative analysis, problem solving, and modeling with linear, exponential, and quadratic functions. The use of mathematics specific technology to support understanding of the concepts is required. A C- or better will transfer as a math credit to Central CT State University (CCSU).
Prerequisites: Grade of C- or in higher in MATH 0900I or MATH 0900 or placement using multiple measures
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 137L

MATH 1012 Trigonometry with Embedded Algebra (4 Credits)
This course introduces trigonometry through a functional approach. Trigonometric functions are defined through the unit circle and then applied to triangulation problems. Topics include trigonometric identities, inverse trigonometric functions, oblique triangle trigonometry and the graphs of the trigonometric functions, vectors and the polar coordinate system. Linear, rational, and quadratic functions will be explored in support of the learning of trigonometry. The use of mathematics specific technology to support understanding of the concepts is required.
Prerequisites: C- or higher in MATH 0900I, MATH 0900 or MATH 1001, or placement using multiple measures
Previous: Legacy Equivalent(s): MAT* 184

MATH 1100 Quantitative Reasoning (3 Credits)
This course provides a comprehensive overview of the quantitative skills needed to be an engaged citizen. Critical thinking and problem solving are emphasized along with the application of mathematics to real-world scenarios requiring reasoning from evidence. Students will learn to communicate effectively with numbers and use appropriate technology to enhance their quantitative reasoning ability.
Prerequisites: *Revised 01/26/25 to include corequisite language* Placement using multiple measures OR a grade of D- or higher in MATH 1010/MATH 1011 OR a grade of C- or higher in MATH 0900I/ MATH 0900. A grade of D-, D, or D+ in MATH 0900I/MATH 0900 requires corequisite registration in MATH 0901.
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 146

MATH 1200 Statistics I (3 Credits)
This course covers fundamental concepts in descriptive and inferential statistics, probability, and probability distributions. Descriptive statistics topics include: the concept of population versus sample, frequency distributions, measures of central tendency, measures of variation, measures of position, and correlation and linear regression. Inferential statistics topics include confidence intervals and hypothesis testing. This course requires the use of computer-based statistical software.
Prerequisites: Placement using multiple measures or one of the following: a grade of C- or higher in MATH 1002 or higher, successful completion of MATH 0902, a grade of C- or higher in MATH 0900, or MATH 0900I. Prerequisite or corequisite: MATH 0902 - Statistics I Support, unless exempt via prerequisite or placement.
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 167, MAT* 201

MATH 1201 Statistics I with Computer Applications (4 Credits)
This course covers fundamental concepts in descriptive and inferential statistics, probability, and probability distributions. Descriptive statistics topics include: the concept of population versus sample, frequency distributions, measures of central tendency, measures of variation, measures of position, and correlation and linear regression. Inferential statistics topics include confidence intervals and hypothesis testing. Use of software for data analysis and data exploration is an integral part of the course. This course requires the use of computer-based statistical software.
Prerequisites: Placement using multiple measures, OR a grade of D- or higher in MATH 1010 /MATH 1011 , OR a grade of C- or higher in MATH 0900I /MATH 0900 . A grade of D-, D, or D+ in MATH 0988/0989 requires corequisite registration in MATH 0902 .
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 165

MATH 1410 Math for Elementary Education: Geometry/Data (3 Credits)
Presents geometry, measurement, rational numbers, irrational numbers, ratio and proportions, problem-solving, mathematical reasoning and connections, probability, and statistics. The use of mathematics specific technology to support understanding of the concepts is required.
Prerequisites: C- or higher in MATH 1004
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 144

MATH 1500 Applied Business Math (3 Credits)
A course in select topics from contemporary mathematicswith applications for students in business, economics, and social science. Topics include: the concept of function and its rate of change; mathematical modeling with polynomial, exponential and logarithmic functions; financial applications; systems of linear equations; matrices; and linear programming. The use of mathematics specific technology to support understanding is required.
Prerequisites: C- or higher in MATH 1010 or MATH 1011, or placement using multiple measures.
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 152, MAT* 158

MATH 1600 College Algebra (3 Credits)
This course offers the development of numerical, algebraic,and graphical problem-solving techniques to be used in calculus. Techniques are developed to solve equations involving polynomial, radical and rational functions. Polynomial, inverse, rational, exponential, and logarithmic functions are studied, and their applications are explored both algebraically and graphically. Whenever possible, learning of mathematical concepts is embedded in contextualized situations relevant to STEM majors. The use of mathematics specific technology to support understanding of the College Algebra course is required. This course is designed for STEM majors and fulfills the prerequisite requirement for MATH 1610 Precalculus.
Prerequisites: *Revised 01/26/25 to include corequisite language and minimum grade change* Placement using multiple measures OR a grade of C- or higher in MATH 1010. A grade of D-, D, or D+ in MATH 1010 requires corequisite registration in MATH 0906.
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 172, MAT*173, MAT* 175

MATH 1610 Precalculus (4 Credits)
This is an intensive preparatory course for the Calculus course sequence. Topics include a study of functions and their graphs; polynomial functions and their zeros including complex solutions. This also covers rational, trigonometric, exponential, and logarithmic functions and equations. The use of mathematics specific technology to support understanding of the Precalculus course is required.
Prerequisites: *Revised 01/26/25 to reflect minimum grade change* C- or higher in MATH 1600 or placement using multiple measures
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 186

MATH 2200 Statistics II (3 Credits)
This course includes an in-depth study of inferential statistics. Topics include hypothesis testing, statistical inference about means, proportions and variances with one and two populations; tests for goodness of fit, independence, and homogeneity; analysis of variance and experimental design, linear regression and correlation, multiple regression, and nonparametric methods. This course requires the use of computer-based statistical technology.
Prerequisites: A grade of C- or higher in MATH 1200/MATH 1201
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 222

MATH 2495 Math Education in Practice I (1-3 Credits)
This practicum provides students with an early experience in math education while also reinforcing their own content background and overall skills in communicating mathematically. Students will assist and tutor peers in mathematics for a minimum of three hours per week for a full semester in the campus tutor center under the supervision of a math instructor. Each credit equates to 45 hours of experience.
Prerequisites: B or higher in MATH 1600 and two letters of recommendation from mathematics faculty and permission from either the Division Director, Math Coordinator/Chair, Tutor Center Supervisor, or a supervising instructor
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 170

MATH 2500 Calculus for Business and Social Science (3 Credits)
This course introduces applications of calculus in business, economics, and social science. This course is intended for students pursuing degrees in social and behavioral sciences, business, and management. Topics include linear and non-linear functions, limits, derivatives, and integrals. The use of mathematics specific technology to support understanding of calculus concepts is required.
Prerequisites: MATH 1010 (C- or higher), OR MATH 1011 (B- or higher), OR MATH 1500 (C- or higher) OR MATH 1600 C- or higher) OR placement using multiple measures
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 190 /MAT* 230

MATH 2600 Calculus I (4 Credits)
A first course in calculus with a focus on differential calculus. Topics include the study of limits, continuity, rates of change, the definition of the derivative, the Mean Value Theorem, and the Fundamental Theorem of Calculus, and techniques of differentiation of linear, polynomial, exponential, logarithmic, rational, and trigonometric functions. The course will include applications of the derivative to solve real-life problems. Characteristics of functions such as intervals of increase or decrease, concavity, extrema, and end behavior will be studied to describe, reason, interpret, and analyze relationships. The course concludes with an introduction of antiderivatives and integration techniques. The use of mathematics specific technology to support understanding of Calculus I is required.
Prerequisites: Placement using multiple measures OR a grade of C- or higher in MATH 1610
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Business Elective (BUS), Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 254

MATH 2610 Calculus II (4 Credits)
Calculus II focuses on two related topics: methods and applications of integration, and infinite series and representation of functions by power series. Topics include Riemann sums, definite and indefinite integrals, polar and parametric curves, applications to geometry (area, volume, arc length), sequences and series, convergence tests, power series, Taylor series and applications to real-life problems. The use of mathematics specific technology to support understanding of calculus is required.
Prerequisites: C- or higher in MATH 2600
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 256

MATH 2611 Discrete Mathematics for Computer Science (4 Credits)
A course designed to prepare computer science majors for a background in mathematical abstraction, notation, and critical thinking. Topics include logic, relations, functions, basic set theory, proof techniques, mathematical induction, graph theory, combinatorics, discrete probability, recursion, recurrence relations, number theory, and graph theory. It is intended for Computer Science majors. The use of mathematics specific technology to support understanding of the Discrete Mathematics for Computer Science course is required.
Prerequisites: C- or higher in MATH 2600
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 210, MAT* 287

MATH 2620 Calculus III: Multivariable (4 Credits)
This is the third course in the calculus sequence for mathematics, science, and engineering majors. Topics include analytical geometry in space, vector-valued functions with applications, differentiation, and integration of multivariable functions with applications, integration in vector fields including line and surface integrals, and Green's, Stokes', and the Divergence Theorems. The use of technology to support mathematics specific understanding of calculus concepts is required.
Prerequisites: C- or higher in MATH 2610
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 268

MATH 2621 Linear Algebra (4 Credits)
This is a beginning course in linear algebra intended for students in mathematics, science, and engineering. Topics include systems of linear equations, matrices, determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors, distance, and orthogonality. Applications from various disciplines will be considered. The use of mathematics specific technology to support the understanding of Linear Algebra is required.
Prerequisites: C- or higher in MATH 2610
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 274

MATH 2622 Differential Equations (4 Credits)
This is an introductory differential equations course formathematics, science, and engineering majors. Topics include solution methods for ordinary differential equations of the first and higher order, operators, numerical methods, systems of differential equations, Laplace transforms, and various applications. The use of mathematics specific technology to support the understanding of the Differential Equations course is required.
Prerequisites: C- or higher in MATH 2610
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 286, MAT* 285

MATH 2623 Foundations of Advanced Mathematics (4 Credits)
A bridge between calculus and upper-level mathematics courses. Logic, sets, relations, functions, methods of proof. The course uses examples from calculus, elementary number theory, geometry, discrete mathematics, basic abstract algebra, and linear algebra. Emphasis is on concepts that will be encountered in later undergraduate courses. It is intended for Mathematics majors.
Prerequisites: C- or higher in MATH 2610
General Education: Quantitative Reasoning (QUAX)
Elective Code(s): Liberal Arts Elective (LART)
Previous: Legacy Equivalent(s): MAT* 287