Math (MATH)

MATH 074  1 credit  
MATH ORIENTATION  
Emphasizes the attributes of a successful math student by providing strategies for overcoming math and test-taking anxiety as well as note-taking, problem solving, and time management. Refresher of fundamental math operations and training on technology used in the classroom included. Topics reviewed may include fractions, decimals, signed numbers, ratio, percent, proportion, order of operations, and vocabulary. Prerequisite: None

MATH 078  S,F,W,Sp  3 credits  
PRE-COLLEGE MATH I  
Covers operations on the real numbers (fractions, decimals, integers, etc.) and introduces the concepts of ratios, proportions, and percents with an emphasis on contextual learning. This is the first 3 credits of a 6 credit course designed to prepare students for either a non-STEM pathway or an algebra intensive pathway. Prerequisites: B or higher in ABE 062 Level B or placement test

MATH 079  S,F,W,Sp  3 credits  
PRE-COLLEGE MATH I  
Covers operations on and applications of ratios, proportions, and percents. Also includes topics in geometry and measurement with an introduction to algebraic expressions. Emphasis is placed on contextual learning. This is the second 3 credits of a 6 credit course designed to prepare students for either a non-STEM pathway or an algebra intensive pathway. Prerequisites: C or better in MATH 078 or placement test

MATH 087  S,F,W,Sp  3 credits  
ESSENTIALS OF PRE-COLLEGE MATH II  
Provides an introduction to algebraic concepts such as algebraic expressions, linear equations, and linear functions with an emphasis on contextual learning. This is the first 3 credits of a 6 credit course designed for students who are not planning on taking a course in calculus. Prerequisites: C or better in MATH 079, Placement Exam, or Instructor Permission

MATH 088  S,F,W,Sp  3 credits  
PRE-COLLEGE MATH II  
Covers solving linear equations and inequalities and an introduction to graphing. Techniques and strategies for problem solving are emphasized. This is the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 09-10. Credit cannot be earned for both MATH 089 and TECH 089. Prerequisites: C or better in MATH 087 or MATH 088 or TECH 088, placement exam, or instructor permission.

MATH 089  S,F,W,Sp  2 credits  
PRE-COLLEGE MATH II  
Covers solving systems of linear equations and operations on polynomials. This is the continuation of the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 09-10. Credit cannot be earned for both MATH 089 and TECH 089. Prerequisites: C or better in MATH 087 or MATH 088 or TECH 088, placement exam, or instructor permission.

MATH 097  S,F,W,Sp  3 credits  
ESSENTIALS OF PRE-COLLEGE MATH III  
Provides further exploration of algebraic concepts such as linear equations, exponential functions, and an introduction to statistical concepts with an emphasis on contextual learning. This is the third in a three quarter pre-college mathematics sequence which contains pre-college math modules 11-13. Credit cannot be earned for both MATH 098 and TECH 098. Prerequisites: C or better in MATH 089 or TECH 098 or MATH 097, placement exam, or instructor permission.

MATH 098  S,F,W,Sp  3 credits  
PRE-COLLEGE MATH III  
Covers factoring polynomials and operations on rational expressions. Also provides an introduction to functions, logarithms, and exponentials. This is the third in a three quarter pre-college mathematics sequence which contains pre-college math modules 11-13. Credit cannot be earned for both MATH 098 and TECH 098. Prerequisites: C or better in MATH 089 or TECH 098 or MATH 097, placement exam, or instructor permission.

MATH 099  S,F,W,Sp  2 credits  
PRE-COLLEGE MATH III  
Covers operations on radical expressions as well as solving and graphing quadratic equations. This is the continuation of the third in a three course pre-college mathematics sequence which contains pre-college math modules 14-15. Credit cannot be earned for both MATH 099 and TECH 099. Prerequisites: C or better in MATH 098 or TECH 098, placement exam, or instructor permission.

MATH 105  W,Sp  5 credits  
MATH FOR HEALTH SCIENCES  
Includes a review of the basic arithmetic skills, including whole numbers and decimal numbers; fractions and percentages; powers of 10 and logarithms; introduction to basic algebraic concepts, including fractional equations and formulas; metric, apothecaries and household systems of measurement and calculations needed to determine dosages. Prerequisite: MATH 078/079 or TECH 079 with a grade of C or better.

MATH 106  S,F,W,Sp  5 credits  
INDUSTRIAL MATHEMATICS  
Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry. Prerequisite: MATH 079 or TECH 079 with a C or better or instructor permission.
MATH&107  S,F,W,Sp  5 credits
MATH IN SOCIETY  NS,Q
Functions as a terminal course in mathematics for students whose major does not require further mathematics. The core topics of this course are logic, probability and statistics. Additional topics will be selected by the instructor. These topics could include geometry, number systems, linear programming, set theory, number theory, functions, graph theory, topology, etc.
Prerequisites: MATH 098/099 or TECH 098/099 or MATH 087/097 with a grade of C or higher.

MATH 125  F,W  5 credits
APPLIED COLLEGE ALGEBRA  NS,Q
Covers equations and inequalities; systems of equations and inequalities; graphing linear, quadratic, polynomial, rational, exponential, and logarithmic functions; matrix operations; linear programming and simplex method; and mathematics of finance. The student may also be introduced to Markov processes and game theory. Students may meet prerequisite by demonstrating ability through testing, prior experience, or prior course work not at LCC. Some colleges require this course for business majors. The course will fulfill the quantitative skills or the requirements of the AA-DTA natural science distribution list. Prerequisites: MATH 099 with a C or better.

MATH&131  F  5 credits
MATH FOR ELEMENTARY EDUCATORS 1  NS,Q
Strengthens students understanding of problem solving, operations on whole numbers, decimals and fractions, and number theory. First of two-part series.
Prerequisites: MATH 098/TECH 098 or MATH 099/TECH 099 or MATH 087/097 with a grade of C or better.

MATH&132  W  5 credits
MATH FOR ELEMENTARY EDUCATORS 2  NS,Q
Strengthens students understanding of the real number system, probability and statistics, geometry, measurement, functions and graphs. This is the second class in a two-part series.
Prerequisites: MATH& 131 (was MATH 121) with a grade of C or better. (MATH& 107 (was MATH 130) is recommended).

MATH&141  S,F,W,Sp  5 credits
PRECALCULUS I  NS,Q
Reviews basic algebraic operations, equations, inequalities, and operations on functions. Analyzes and graphs polynomial, rational, exponential, and logarithmic functions. This is the first course in a two course sequence leading to calculus.
Prerequisites: Placement score or MATH 098 and 099 (or TECH 098 and 099) with a C or better

MATH&142  S,F,W,Sp  5 credits
PRECALCULUS II  NS,Q
Covers concepts, properties and algebra of trigonometric functions, including their graphs, inverses, law of sines and cosines, identities, and equations. Introduces parametric and polar coordinates and vector operations. This is the second course in a two course sequence leading to calculus.
Prerequisites: Placement score or MATH& 141 with a C or better.

MATH&146  S,F,W,Sp  5 credits
INTRODUCTION TO STATISTICS  NS,Q
Introduces descriptive statistics, probability, and inferential statistical methods. Topics include probability distributions, sampling techniques, measures of central tendency and dispersion, correlation, regression, and statistical inference.
Prerequisites: MATH 099 or MATH 097 with a grade of C or better or appropriate placement test score.

MATH&148  W,Sp  5 credits
BUSINESS CALCULUS  NS,Q
Introduces calculus concepts needed by students of management, social science or biology, or can serve as a survey course for liberal arts majors. Course covers sets, systems of numbers, relations and functions, limits, differentiation and integration, including the definite integral, exponential and logarithmic functions and applications from various fields. (Formerly known as MATH 140)
Prerequisite: MATH 125 OR MATH& 141 with a grade of C or better.

MATH&151  F,W  5 credits
CALCULUS I  NS,Q
Investigates the ideas of continuity and limit, introduces the derivative as a limit, practices techniques for computing derivatives of functions, discusses the mean value theorem and its significance, utilizes these concepts to solve problems involving related rates and extreme values. This is the first of four quarters of standard Calculus sequence for STEM majors.
Prerequisites: MATH& 142 with a grade of C or better.

MATH&152  W,Sp  5 credits
CALCULUS II  NS,Q
Introduces techniques of antidifferentiation of functions including trigonometric, logarithmic, exponential, and hyperbolic functions. Applies the concept of the definite integral to solve problems involving force, work, volume, surface area, business and economics. (Formerly known as MATH 152)
Prerequisite: MATH& 151 with a grade of C or better.

MATH&153  S,Sp  5 credits
CALCULUS III  NS,Q
Focuses on infinite series, vector calculus and their applications. Incorporates the use of polar, cylindrical and spherical coordinate systems in applications of the calculus. (Formerly known as MATH 153)
Prerequisite: MATH& 152 with a grade of C or better.
MATH 211  3 credits
STATISTICAL PROJECTS  NS,Q
Provides an opportunity for students to apply the statistical processes learned in MATH 210/BUS 206 (was BSAD 206) by designing their own statistical project. Topics may include nonparametric statistics, sampling techniques, design of experiments and data analysis. This may be offered as a Capstone course. See Capstone prerequisites. Prerequisite: MATH 210 or BUS 206 (was BSAD 206) with a grade of C or better or concurrent enrollment in MATH 210 or BUS 206 (was BSAD 206).

MATH 215  W  5 credits
DISCRETE STRUCTURES  NS,Q
Acquaints students with mathematical concepts used in computer science. Topics may include logic, induction, combinatorics, recursion, analysis of algorithms and graph theory. Prerequisite: MATH 142 with a grade of C or better.

MATH 220  Sp  5 credits
LINEAR ALGEBRA  NS,Q
Presents the theory and properties of matrices, determinants and linear transformations. Introduces vector space and the Gram-Schmidt orthonormalization process. Deals with the calculation and application of eigenvalues and eigenvectors. Prerequisite: MATH& 152 with a grade of C or better or instructor permission.

MATH 240  W  5 credits
DIFFERENTIAL EQUATIONS  NS,Q
Introduces techniques of solving ordinary differential equations including the elementary methods used for first order differential equations, method of undetermined coefficients and variation of parameters for higher order equations. Includes techniques of solving systems of differential equations, the method of Laplace transforms and series solutions to differential equations. Prerequisite: MATH& 254 (was MATH 154) with a grade of C or better.

MATH 246  F,Sp  5 credits
PROBABILITY AND STATISTICS  NS,Q
Covers collecting and summarizing data, probability distributions, confidence intervals, testing hypotheses for one and two samples, chi-square tests, ANOVA, and regression. Emphasis will be placed on data analysis through spreadsheet applications. Prerequisites: MATH 125 or MATH& 141 with a grade of C or better or placement.

MATH&254  F  5 credits
CALCULUS IV  NS,Q
Continuation of Calculus III. Topics include partial derivatives, multiple integrals, and vector calculus. Prerequisites: MATH& 153 with a grade of C or better.