MAT - Mathematics

Courses

MAT 093 Math Literacy
5 Credits. 5 Lecture Hours. 0 Lab Hour.
A course that develops conceptual and procedural tools to support student use of key mathematical concepts in a variety of contexts. Topics include: numeracy, proportional reasoning, algebraic reasoning, and functions.
Prerequisites: Appropriate placement

MAT 096 Beginning and Intermediate Algebra
5 Credits. 5 Lecture Hours. 0 Lab Hour.
A course in intermediate algebra emphasizing real-world applications. Topics include: systems of linear equations; algebraic, graphic, and numerical representation; an introduction to functions; graphs of linear functions; solving linear equations and inequalities; exponents and radicals; factoring polynomials; solving quadratic, polynomial and radical equations; graphs of quadratic functions; and simplifying rational expressions.
Prerequisites: MAT 093 (minimum grade B) or appropriate placement

MAT 105 Quantitative Reasoning
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course that emphasizes numeracy, model-building, probability, and statistics in real-world contexts. Topics include proportional reasoning, linear and exponential modeling, descriptive statistics, personal finance, and using spreadsheets as a problem-solving tool. Students complete projects to apply course concepts.
Prerequisites: MAT 093 (minimum grade C) or appropriate placement
Ohio Transfer Module Approved

MAT 105A Intensive Quantitative Reasoning
4 Credits. 2 Lecture Hours. 4 Lab Hours.
A course that emphasizes numeracy, model-building, probability, and statistics in real-world contexts, with additional practice for understanding mathematical operations. Topics include: proportional reasoning, linear and exponential modeling, descriptive statistics, personal finance, and using spreadsheets as a problem-solving tool. Students complete projects to apply course concepts.
Prerequisites: Appropriate Math placement
Ohio Transfer Module Approved

MAT 111 Business Mathematics
3 Credits. 2 Lecture Hours. 2 Lab Hours.
An algebra-based course on practical applications of mathematics. Topics include: review of arithmetic, algebra, and percents; payroll; banking; taxes; insurance; financial math, and elementary statistics. Students need a scientific calculator.
Prerequisites: MAT 093 (minimum grade C) or appropriate placement

MAT 122 Aviation Mathematics
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on technical applications of algebra, geometry, and statistics used by students in aviation-related studies. Topics include: simplifying algebraic expressions, solving equations (linear, quadratic, rational, and radical), graphing equations in two variables, inequalities, elementary statistics, right triangle trigonometry, and vectors. Students need a scientific calculator.
Prerequisites: MAT 093 (minimum grade C) or appropriate placement

MAT 124 Applied Algebra and Geometry
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on applications of algebra, geometry, and trigonometry. Topics include measurement, unit conversion, scientific notation, simplifying expressions (algebraic, linear, quadratic, and square roots), graphing equations (linear and inequalities), 2D and 3D geometry, angle measurements, and right and oblique triangle trigonometry. Students need a scientific calculator.
Prerequisites: MAT 093 or appropriate placement

MAT 125 Algebra and Trigonometry
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on applications of algebra, geometry, and trigonometry. Topics include: simplifying algebraic expressions, right and oblique triangles, and solving equations (linear, quadratic, rational, and trigonometric). Students need a graphing calculator.
Prerequisites: MAT 096 or MAT 124 (minimum grade C for both) or appropriate Math placement

MAT 126 Functions and Calculus
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A continuation of MAT 125. Topics include: functions (linear, exponential, logarithmic, trigonometric, polynomial, and rational), complex numbers, graphing, solving equations, and applications of differential and integral calculus. Students need a graphing calculator.
Prerequisites: MAT 125 (minimum grade C) or appropriate placement

MAT 131 Statistics 1
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A course on descriptive and inferential statistics. Topics include: the purpose of statistics, univariate and bivariate descriptive statistics, probability, normality and sampling distributions, confidence intervals, and hypothesis testing.
Prerequisites: MAT 093 (minimum grade C), or appropriate placement
Ohio Transfer Module Approved

MAT 131A Statistics 1 with Support
4 Credits. 2 Lecture Hours. 4 Lab Hours.
A course on descriptive and inferential statistics with integration of relevant arithmetic and algebra topics. Topics include: the purpose of statistics, univariate and bivariate descriptive statistics, probability, normality and sampling distributions, confidence intervals, and hypothesis testing.
Prerequisites: Appropriate placement
Ohio Transfer Module Approved

MAT 132 Statistics 2
3 Credits. 2 Lecture Hours. 2 Lab Hours.
A continuation of MAT 131. Topics include: confidence intervals and hypothesis tests for two-sample means and proportions, contingency tables, one-way analysis of variance, multiple regression, and nonparametric statistics.
Prerequisites: MAT 131 (minimum grade C)
Ohio Transfer Module Approved

MAT 151 College Algebra
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on concepts and applications of algebra. Topics include: representing linear, exponential, logarithmic, power, polynomial, and rational functions numerically, graphically, and algebraically. Students need a graphing calculator.
Prerequisites: MAT 096 (minimum grade C) or appropriate placement
Ohio Transfer Module Approved

MAT 151A College Algebra With Support
5 Credits. 3 Lecture Hours. 4 Lab Hours.
A course on concepts and applications of algebra that includes instruction in beginning and intermediate-level algebra skills. Topics include: representing linear, exponential, logarithmic, power, polynomial, and rational functions numerically, graphically, and algebraically. Students need a graphing calculator.
Prerequisites: MAT 093 (minimum grade B) or appropriate placement

MAT 152 Trigonometry
4 Credits. 4 Lecture Hours. 0 Lab Hour.
A course on concepts and applications of trigonometry. Topics include: right triangle and unit circle definitions of the trigonometric functions, solving right and oblique triangles, vectors, graphs of trigonometric functions and their inverses, trigonometric identities, and solving trigonometric equations. Students need a graphing calculator.
Prerequisites: MAT 151 (minimum grade C) or appropriate Math placement
Ohio Transfer Module Approved

MAT 153 Pre-Calculus
6 Credits. 6 Lecture Hours. 0 Lab Hour.
A course that combines College Algebra and Trigonometry. Topics include: properties, graphs and applications of functions (linear, exponential, logarithmic, power, polynomial, rational, trigonometric, and inverse trigonometric); solving equations; solving right and oblique triangles; vectors; and trigonometric identities. Students need a graphing calculator.
Prerequisites: MAT 096 (minimum grade B) or appropriate Math placement or instructor consent
Ohio Transfer Module Approved

MAT 161 College Algebra for Diagnostic Medical Sonography
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on concepts and applications of algebra. Topics include: representing linear, exponential, logarithmic, power, polynomial, and rational functions numerically, graphically, and algebraically; and concepts of plane and solid geometry. Students need a graphing calculator.
Prerequisites: MAT 096 (minimum grade C) or appropriate placement

MAT 215 Business Calculus
6 Credits. 6 Lecture Hours. 0 Lab Hour.
A course on calculus emphasizing business applications. Topics include: analysis of functions using limits, the derivative and derivative function, rules of differentiation, applications of derivative calculus, and the definite integral. Students need a graphing calculator.
Prerequisites: MAT 151 (minimum grade C)
Ohio Transfer Module Approved

MAT 251 Calculus 1
5 Credits. 5 Lecture Hours. 0 Lab Hour.
A course on concepts and applications of calculus. Topics include: the library of functions, analysis of functions with limits, the derivative and the derivative function, interpretations of the derivative, rules of differentiation, and introduction to integral calculus. Students need a graphing calculator.
Prerequisites: MAT 126 or MAT 152 or MAT 153 (minimum C grade) or appropriate placement
Ohio Transfer Module Approved

MAT 252 Calculus 2
5 Credits. 5 Lecture Hours. 0 Lab Hour.
A continuation of MAT 251. Topics include: integration techniques (substitution, trigonometric, parts, partial fractions), applications of integration (area, volume, arc length), differential equations, parametric equations, polar curves, L'Hopital's rule, improper integrals, sequences and series, and Taylor series. Students need a graphing calculator.
Prerequisites: MAT 251 (minimum grade C) or appropriate Math placement
Ohio Transfer Module Approved

MAT 253 Calculus 3
5 Credits. 5 Lecture Hours. 0 Lab Hour.
A continuation of MAT 252. Topics include: vectors and vector-valued functions; functions of several variables; partial derivatives and directional derivatives with gradients; tangent planes and local linearization; and optimization methods with Lagrange multipliers, iterated integration, and calculus of vector fields. Students need a graphing calculator.
Prerequisites: MAT 252 (minimum grade C) or approprate placement
Ohio Transfer Module Approved

Ohio Transfer Assurance Guide Approved

MAT 260 Elementary Differential Equations
4 Credits. 4 Lecture Hours. 0 Lab Hour.
An introduction to topics involving ordinary differential equations. Topics include: solutions to and applications of first-order and linear higher-order differential equations, series solutions near ordinary and regular singular points, and Laplace transforms.
Prerequisites: MAT 252 (minimum grade C)