

MAT

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 115 Pre-Statistics

3 Credits. 2 Lecture Hours. 2 Lab Hours.

A course on mathematical modeling of real data using curve fitting of functions. Topics include: modeling linear, linear systems, quadratic, exponential, and radical functions; and verifying the model using coefficient of determination and limitations of the model. Students need a graphing 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 graphing 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: percents, measurement, unit conversions, scientific notation, simplifying algebraic expressions, solving equations (linear and quadratic), graphing equations, inequalities, plane and solid geometry, and right and oblique triangle trigonometry. Students need a graphing 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 (minimum grade C) or MAT 120 (minimum grade A) or MAT 121 (minimum grade C) or appropriate 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 096 or MAT 105 or MAT 115 or MAT 124 or MAT 150 (minimum grade C for all), or 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, and multiple regression.

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 152 Trigonometry**4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A course on concepts and applications of trigonometry. Topics include: trigonometric functions and identities, inverse of trigonometric functions, vectors, complex numbers, and parametric equations.

Students need a graphing calculator.

Prerequisites: MAT 151 (minimum grade C) or appropriate placement
Ohio Transfer Module Approved

MAT 153 Pre-Calculus**6 Credits. 6 Lecture Hours. 0 Lab Hour.**

A course on concepts and applications of pre-calculus. Topics include: review of linear, exponential, power, polynomial, and rational functions; trigonometric functions; trigonometry; vectors; complex numbers; and parametric equations. Students need a graphing calculator.

Prerequisites: MAT 096 (minimum grade B) or appropriate 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: methods of integration (substitution, parts, tables, numerical and CAS) with modeling applications, sequences and series, Taylor series approximations, and solutions to differential equations. Students need a graphing calculator.

Prerequisites: MAT 251 (minimum grade C) or appropriate 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 appropriate 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)