MATHEMATICS (MATH)

MATH-015 Pre-Algebra
3 Credits
Lecture: 3 hours per week
Offering: Fall and Spring Only, All Years
This course provides important skill building in basic computational skills, the language of mathematics, and problem solving required for pre-college level math courses. Students will be able to apply principles of whole number operations, fractions, decimals, percents, integers, ratios and proportions, and algebraic equations.
Prerequisites: An appropriate score on a placement test.

MATH-025 Elementary Algebra
3 Credits
Lecture: 3 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides an introduction to basic algebraic concepts. Students will be able to apply principles of integers, variables, polynomials, exponents, factoring, and solving and graphing first-degree equations. MATH-025 provides important skill-building for those who have not taken or have had difficulty with high school algebra.
Prerequisites: MATH-015 or an appropriate score on a placement test.

MATH-090 College Preparatory Math
4 Credits
Lecture: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides students with an individualized mathematics curriculum to prepare them for further mathematics course work in their program. Students will take a diagnostic assessment, the results of which will outline their individualized math study path. Due to the individualized nature of this course, not all students are expected to complete all course outcomes. Topics will include: solving and graphing linear equations and inequalities; working with variables, exponents, polynomials, and factoring. Depending on your math pathway, additional topics may include expressions and equations that are rational, radical, quadratic, exponential, and logarithmic. This course is graded as satisfactory or unsatisfactory.
Prerequisites: MATH-015, MATH-025 or an appropriate score on a placement test.
Pre/Corequisites: CLC-101

MATH-108 Intermediate Algebra
4 Credits
Lecture: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides development of algebraic concepts beyond MATH-025 or first year high school algebra. Students will be able to apply principles of linear, quadratic, and rational equations, radicals, circles and parabolas, complex numbers, functions, exponents, and logarithms. MATH-108 develops skills necessary for success in algebra-based, college-level math courses. Note: MATH-108 carries no credit if taken after successful completion of higher numbered math courses with the exception of MATH-123 or MATH-130.
Prerequisites: MATH-025, MATH-090 or an appropriate score on a placement test.

MATH-123 Contemporary Mathematics
3 Credits
Lecture/Lab: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course models the use of mathematics in real world situations. Students will be able to apply mathematical modeling principles to a variety of practical situations including personal finance, risk assessment, inferences, path analysis, linear programming, similarity and scaling, right-triangle trigonometry, game theory, and/or exponential growth.
Prerequisites: MATH-025, MATH-090 or an appropriate score on a placement test.

MATH-130 Finite Mathematics
4 Credits
Lecture: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides practical insights into the important role of mathematics in the business world. Students will be able to apply principles of systems of linear equations and inequalities, linear programming, set theory, combinatorics, probability, and elementary concepts of statistics as they relate to decision making and problem solving.
Prerequisites: MATH-108 or an appropriate score on a placement test.

MATH-143 College Algebra
3 Credits
Lecture: 3 hours per week
Offering: Fall, Spring, and Summer, All Years
This course covers the definition of functions and their properties and notation in both algebraic and graphical contexts. Students will be able to apply principles of polynomial and rational equations, functions and their inverses, graphs, systems of equations, complex numbers, sequences, and exponential and logarithmic functions. MATH-143 along with MATH-144 prepares students for traditional calculus courses which are required for degrees in mathematics, engineering, computer science, physics, chemistry, and other STEM related fields. Note: The combination of MATH-143 and MATH-144 may be used in place of MATH-147 as the prerequisite for MATH-170.
Prerequisites: MATH-108 or an appropriate score on a placement test.

MATH-144 Analytic Trigonometry
2 Credits
Lecture: 2 hours per week
Offering: Fall, Spring, and Summer, All Years
This course examines trigonometric concepts in terms of the Cartesian coordinate plane and the rectangular and polar coordinate systems. Students will be able to apply principles of angles, fundamental identities and identity verifications of trigonometry, and solving and graphing trigonometric functions. MATH-144 is intended for students following a science, technology, engineering, or mathematics pathway. MATH-143 and MATH-144 cover the content of MATH-147. Note: MATH-144 carries no credit if taken after successful completion of any higher numbered math course with the exception of MATH-157, MATH-160, MATH-253, or MATH-257.
Prerequisites: MATH-143 or an appropriate score on a placement test.

MATH-147 Pre-Calculus
5 Credits
Lecture: 5 hours per week
Offering: Fall, Spring, and Summer, All Years
This course is designed for the well-prepared mathematics student who wishes to condense the one-year sequence of MATH-143 and MATH-144 into one semester. Students will be able to apply principles of polynomial and rational equations, functions and their inverses, graphs, systems of equations, complex numbers, exponential and logarithmic functions, trigonometric functions, identities and graphs, applications of triangles, sequences and series, and polar coordinates. MATH-147 prepares students for calculus courses which are required for degrees in mathematics, engineering, computer science, physics, chemistry, and other STEM related fields. Note: MATH-147 carries no credit if taken after successful completion of any higher numbered math course with the exception of MATH-157, MATH-253, or MATH-257. MATH-147 carries two credits if taken after MATH-143.
Prerequisites: MATH-108 or an appropriate score on a placement test.

MATH-151 Foundations for Statistics
4 Credits
Lecture: 4 hours per week
Offering: Fall and Spring Only, All Years
This course provides students with the prerequisite skills necessary for success in an inferential statistics course. It integrates intermediate algebra skills with sampling techniques and data analysis methods foundational for collecting, organizing, and summarizing data. Algebra topics include ratios, proportional reasoning, and solving proportional, linear, and radical equations. Data analysis methods include graphical and numerical descriptive techniques for quantitative and categorical data and modeling bivariate data with trend lines. Learning strategies emphasize conceptual understanding over mathematical calculations.
Prerequisites: MATH-025, MATH-090 or an appropriate score on a placement test.

MATH-157 Mathematics for Elementary School Teachers I
3 Credits
Lecture: 3 hours per week, **Lab:** 1 hour per week
Offering: Fall and Spring Only, All Years
This course provides prospective elementary school teachers with a problem-solving approach to the topics of the elementary school math curriculum. Students will be able to apply principles and concepts of basic arithmetic operations on the set of real numbers. MATH -157 is required for elementary teacher certification by the State of Idaho.
Prerequisites: MATH-143 or MATH-147 or an appropriate score on a placement test.

MATH-160 Survey of Calculus
4 Credits
Lecture: 4 hours per week
Offering: Fall and Spring Only, All Years
This course develops an understanding of the fundamentals of differential and integral calculus and the application of these principles and theories to the solution of real world problems. Students will be able to apply principles of functions, graphs, limits, derivatives, exponential and logarithm functions, and integration. MATH-160 is the introduction to calculus as used in business, social sciences, and life sciences. Note: MATH-160 carries no credit if taken after successful completion of any higher numbered math course with the exception of MATH-187, MATH-253, or MATH-257.
Prerequisites: MATH-143 or MATH-147 or an appropriate score on the placement test.

MATH-170 Analytic Geometry and Calculus I
4 Credits
Lecture: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides an introduction to calculus as the mathematics of change and motion. Students will be able to apply principles of limits, derivatives, and integrals. MATH-170 builds a foundation for all further study typically required in mathematics, engineering, computer science, physics, chemistry, and other STEM related fields. Note: MATH-170 carries no credit if taken after successful completion of a higher numbered math course with the exception of MATH-187, MATH-253, or MATH-257.
Prerequisites: MATH-147 or MATH-143 and MATH-144 or an appropriate score on a placement test.

MATH-175 Analytic Geometry and Calculus II
4 Credits
Lecture: 4 hours per week
Offering: Fall and Spring Only, All Years
This course is a continuation of the calculus sequence. Students will be able to apply techniques of integration, applications of integration, polar coordinates, parametric equations, sequences, and series. MATH-175 is required for many mathematics, engineering, computer science, physics, chemistry, and other STEM related degrees. Note: MATH-175 carries no credit if taken after successful completion of a higher numbered math course with the exception of MATH-187, MATH-253, MATH-257, or MATH-335.
Prerequisites: MATH-170 or an appropriate score on a placement test.

MATH-187 Discrete Mathematics
4 Credits
Lecture: 4 hours per week
Offering: Fall and Spring Only, All Years
This course provides an overview of mathematical topics applicable to the study of computer science. Students will be able to apply principles of basic set theory, propositional and predicate logic, number systems, Boolean algebra, combinatorics, and graph theory. MATH-187 is intended for computer science majors, mathematics majors, and for students wishing to pursue in-depth study of computer science. Recommended: Knowledge of programming language such as C++ or Java.
Prerequisites: MATH-147 or MATH-144 or an appropriate score on a placement test.

MATH-253 Principles of Applied Statistics
3 Credits
Lecture: 3 hours per week
Offering: Fall, Spring, and Summer, All Years
This course provides an introduction to statistical methods encompassing descriptive statistics and inferential statistics. Students will be able to apply principles of hypothesis testing for one and two samples, correlation and regression, chi-square, analysis of variance, and probability.
Prerequisites: MATH-130, MATH-143, MATH-147, or MATH-151 or an appropriate score on a placement test.

MATH-257 Mathematics for Elementary School Teachers II
3 Credits
Lecture: 3 hours per week, **Lab:** 1 hour per week
Offering: Spring Only, All Years
This course provides prospective elementary school teachers with a problem-solving approach to the topics of the elementary school math curriculum and is a continuation of MATH-157. Students will be able to apply principles of statistics, probability, geometry, and measurement. MATH-257 is required for elementary teacher certification by the State of Idaho.
Prerequisites: MATH-157

MATH-275 Analytic Geometry and Calculus III
4 Credits
Lecture: 4 hours per week
Offering: Fall, Spring, and Summer, All Years
This course is the conclusion of the calculus course series. Students will be able to apply principles of vectors, vector-valued functions, partial differentiation, multiple integration, Green's Theorem, Stoke's Theorem, and the Divergence Theorem. MATH-275 is intended for STEM majors.
Prerequisites: MATH-175

MATH-335 Linear Algebra
3 Credits
Lecture: 3 hours per week
Offering: Fall Only, All Years
This course addresses vector spaces and linear mappings between such spaces. Students will be able to apply principles of linear systems, matrices, determinants, vector spaces, linear transformations, eigenvalues, and diagonalization of matrices. MATH-335 is intended for students seeking degrees in mathematics, computer science, or engineering.
Prerequisites: MATH-170

MATH-370 Introductions to Ordinary Differential Equations
3 Credits
Lecture: 3 hours per week
Offering: Fall and Spring Only, All Years
This course addresses first, second, and higher order differential equations. Students will be able to apply a variety of techniques to solve ordinary differential equations, and systems of linear and non-linear equations. MATH-370 is intended for students seeking degrees in mathematics, physics, or engineering.
Prerequisites: MATH-175