MATHEMATICS (MTH)

MTH 111 Basic Technical Mathematics (3 CR.)
Provides a foundation in mathematics with emphasis in arithmetic, unit conversion, basic algebra, geometry and trigonometry. This course is intended for CTE programs. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) At least one of MTE units 1-3; MDE 10; or other placement methods
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 133 Mathematics for Health Professions (3 CR.)
Presents in context the arithmetic of fractions and decimals, the metric system and dimensional analysis, percents, ratio and proportion, linear equations, topics in statistics, topics in geometry, logarithms, topics in health professions including dosages, dilutions and IV flow rates. This course is intended for programs in the Health Professions. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) At least one of MTE units 1-3; MDE 10; or other placement methods
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 154 Quantitative Reasoning (3 CR.)
Some students may be required to take MTH 154 with MDE 54. Presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) MDE 10, or placement procedures in College Catalog
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 155 Statistical Reasoning (3 CR.)
Some students may be required to take MTH 155 with MDE 55. Presents elementary statistical methods and concepts including visual data presentation, descriptive statistics, probability, estimation, hypothesis testing, correlation and linear regression. Emphasis is placed on the development of statistical thinking, simulation, and the use of statistical software. Credit will not be awarded for both MTH 155: Statistical Reasoning and MTH 245: Statistics I or equivalent.
Prerequisite(s) MDE 10, or placement procedures in College Catalog
This is a Passport and UCGS transfer course.

MTH 161 PreCalculus I (3 CR.)
Some students may be required to take MTH 161 with MDE 61. Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations and inequalities. Credit will not be awarded for both MTH 161: Precalculus I and MTH 167: Precalculus with Trigonometry or equivalent. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) MDE 60, or placement procedures in College Catalog
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 162 PreCalculus II (3 CR.)
Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations and inequalities. Credit will not be awarded for both MTH 161: Precalculus I and MTH 167: Precalculus with Trigonometry or equivalent. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Placement or completion of MTH 161, or equivalent with a grade of C or better
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 166 Precalculus with Trigonometry (5 CR.)
Presents college algebra, analytic geometry, trigonometry, and algebraic, exponential, and logarithmic functions. (Credit cannot be awarded for both MTH 163 and MTH 166.) Lecture 5 hours per week.

MTH 167 PreCalculus with Trigonometry (5 CR.)
Presents topics in power, polynomial, rational, exponential, and logarithmic functions, systems of equations, trigonometry, and trigonometric applications, including Law of Sines and Cosines, and an introduction to conics. Credit will not be awarded for both MTH 167: Precalculus with Trigonometry and MTH 161/MTH 162: Precalculus I and II or equivalent. Lecture 5 hours. Total 5 hours per week.
Prerequisite(s) Completion of MTE 1-9 or other placement methods
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 245 Statistics I (3 CR.)
Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. Credit will not be awarded for both MTH 155: Statistical Reasoning and MTH 245: Statistics I or equivalent. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 154, MTH 161 or MTH 167 or equivalent with a grade of C or better
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 246 Statistics II (3 CR.)
Continues the study of estimation and hypothesis testing with emphasis on advanced regression topics, experimental design, analysis of variance, chi-square tests and non-parametric methods. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 245 or equivalent with a grade of C or better

MTH 261 Applied Calculus I (3 CR.)
Introduces limits, continuity, differentiation and integration of algebraic, exponential and logarithmic functions, and techniques of integration with an emphasis on applications in business, social sciences and life sciences. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 161 or equivalent with a grade of C or better
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 262 Applied Calculus II (3 CR.)
Covers techniques of integration, an introduction to differential equations and multivariable calculus, with an emphasis throughout on applications in business, social sciences and life sciences. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 261 or equivalent with a grade of C or better

MTH 263 Calculus I (4 CR.)
Presents concepts of limits, derivatives, differentiation of various types of functions and use of differentiation rules, application of differentiation, antiderivatives, integrals and applications of integration. Lecture 4 hours. Total 4 hours per week.
Prerequisite(s) Completion of MTH 167 or MTH 161/162 or equivalent with a grade of C or better
This is a Passport and UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 264 Calculus II (4 CR.)
Continues the study of calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Features instruction for mathematical, physical and engineering science programs. Lecture 4 hours. Total 4 hours per week.
Prerequisite(s) Completion of MTH 263 or equivalent with a grade of C or better
This is a UCGS transfer course.
Credit for Prior Learning available for this course. More information at https://www.nvcc.edu/admissions/cpl.html.

MTH 265 Calculus III (4 CR.)
Completion of MTH 264: Calculus II or equivalent with a grade of C or better. Focuses on extending the concepts of function, limit, continuity, derivative, integral and vector from the plane to the three dimensional space. Covers topics including vector functions, multivariate functions, partial derivatives, multiple integrals and an introduction to vector calculus. Features instruction for mathematical, physical and engineering science programs. Lecture 4 hours. Total 4 hours per week.

MTH 266 Linear Algebra (3 CR.)
Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigenvalues, and eigenvectors. Features instruction for mathematical, physical and engineering science programs. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 263 or equivalent with a grade of B or better or MTH 264 or equivalent with a grade of C or better

MTH 267 Differential Equations (3 CR.)
Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications and numerical methods. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 264 or equivalent with a grade of C or better

MTH 283 Probability and Statistics (3 CR.)
Prior completion of MTH 265 is preferred. Presents basic concepts of probability, discrete and continuous random variables, and probability distributions. Presents sampling distributions and the Central Limit Theorem, properties of point estimates and methods of estimation, confidence intervals, hypothesis testing, linear models and estimation by least squares, and analysis of variance. Lecture 3 hours. Total 3 hours per week. In-person, proctored testing will be required for this course and is mandatory for exams. Exams will be held on-campus and/or through an approved proctoring testing facility. Distance Course requiring some on-campus meetings.
Prerequisite(s) Completion of MTH 264 with a grade of C or better or equivalent
Corequisite(s) Enrollment in MTH 265

MTH 288 Discrete Mathematics (3 CR.)
Presents topics in sets, counting, graphs, logic, proofs, functions, relations, mathematical induction, Boolean Algebra, and recurrence relations. Lecture 3 credits.
Prerequisite(s) Completion of MTH 263, Calculus I with a grade of C or better or equivalent

MTH 289 Differential Equations Extended (3 CR.)
Presents systems of differential equations, power series solutions, Fourier series, Laplace transform and Fourier transform, partial differential equations, and boundary value problems. Designed as math elective course for mathematical, physical, and engineering science programs. Lecture 3 hours. Total 3 hours per week.
Prerequisite(s) Completion of MTH 267 with a grade of C or better or equivalent