Williston High School
Mathematics Requirements

Standards and benchmarks can be discussed with any instructor or viewed at the ND State Department of Public Instruction website.

3 credits of High School Mathematics are required to graduate. Algebra 1, Geometry, and Advanced Algebra are required for acceptance into a 4-year college.

Freshman Year	Sophomore Year
1 credit Introduction Algebra OR 1 credit Algebra 1 OR 1 credit Geometry	1 credit Conclusion Algebra OR 1 credit Algebra 1 OR 1 credit Basic Geometry OR 1 credit Geometry OR 1 credit Advanced Algebra OR 1 credit Honors Advanced Algebra
Junior Year	**Senior Year**
1 credit Conclusion Algebra OR 1 credit Algebra 1 OR 1 credit Basic Geometry OR 1 credit Geometry OR ½ credit Applied Math 1 ½ credit Applied Math 2 OR 1 credit Advanced Algebra OR 1 credit Honors Advanced Algebra OR ½ credit College Algebra (Dual Credit) OR ½ credit Trigonometry (Dual Credit) OR ½ credit Probability & Statistics * (Dual Credit)	1 credit Conclusion Algebra OR 1 credit Algebra 1 OR 1 credit Basic Geometry OR 1 credit Geometry OR ½ credit Applied Math 1 ½ credit Applied Math 2 OR 1 credit Advanced Algebra OR 1 credit Honors Advanced Algebra OR ½ credit College Algebra (Dual Credit) OR ½ credit Trigonometry (Dual Credit) OR ½ credit Probability & Statistics * (Dual Credit) OR Dual Credit: Calculus I, II, & III (taught at the college)**

*may be taken concurrently with College Algebra or Trig or 2nd semester of Adv Alg
**must have a C or better in College Algebra & Trig

Teacher recommendation for Honors Advanced Algebra and Dual Credit Courses includes, but is not limited to: MAP scores, grades, attendance, and attitude.

All Dual Credit courses have college registration, tuition, and book fees.

A graphing calculator is recommended for most math classes. The cost to buy through the school is $99 or rental is $35 per year.

♦ Introduction Algebra (First ½ of Algebra)

Class Type: Elective
Grade Level: 9
Credit: 1 math credit
Pre-requisite: Difficulty with 8th grade math and teacher placement
Extra Costs: Scientific Calculator ($15)

This course is the first part of a two-year algebra course. It is a course designed for those students who have failed 8th grade math or who are experiencing sufficient difficulty and need to be taught Algebra at a slower pace. At the successful completion of this course, 1 math credit will be earned. The course consists of a strengthening of skills in number theory, fractions, positive and negative numbers, percents, and other non-algebraic topics such as: algebra rules, and solving, graphing, and writing of linear equations and inequalities. All students completing this course should enroll in Conclusion Algebra

♦ Conclusion Algebra (Follow up to Introduction Algebra)

Class Type: Elective
Grade Level: 10, 11, 12
Credit   1 Math Credit
Pre-requisite: Introduction Algebra
Extra Costs: Scientific Calculator ($15)

This course is the second part of a two-year algebra course and is to be taken by those students who have successfully completed Introduction Algebra. The course will consist of a review of Introduction Algebra, followed by the second half of an algebra course. Topics include: systems of two equations, exponential equations, polynomials, radicals, quadratics, and rational expressions. At the successful completion of this course, 1 math credit will be earned.

♦ Algebra 1

Class Type: Required
Grade Level: 9
Credit: 1
Pre-requisite: Strong math background
Extra Costs: Scientific Calculator ($15)

This course reviews the four basic operations and how they apply to fractions, positive real numbers, negative real numbers, and variables. Also included in the course are units pertaining to solving equations, graphing equations, word problems, inequalities, exponential equations, polynomials, radicals, quadratics, and rational expressions. The concepts of special products and factoring are also introduced. The philosophy of this course is to provide a solid foundation in algebra while constantly reviewing ideas.

♦ Geometry

Class Type:	Required for 4-year college acceptance
Grade Level:	9-10
Credit:	1
Pre-requisite:	Algebra 1
Extra Costs:	Construction Tools ($2)
	Graphic Calculator ($99)

Geometry is the study of one-dimensional, two-dimensional, and three-dimensional figures including points, lines, planes, angles, polygons, circles, and polyhedrons. This study is done in four main categories: (1) precise definitions of the figures, (2) constructions of the figures, (3) study of the properties of the figures, and (4) study of deductive reasoning and critical thinking to prove these facts and to solve real problems.

♦ Basic Geometry

Class Type:	Elective-This will not meet requirements for 4-year college Acceptance
Grade Level:	10-12
Credit:	1
Pre-requisite:	Algebra 1 or Introduction & Conclusion Algebra
Extra Costs	Construction Materials ($2)
	Scientific Calculator ($15)

Basic Geometry is the study of shapes and figures including points, lines, angles, triangles, polygons and circles. Emphasis is placed on the study of the facts, construction of figures and how to apply them in practical uses. A brief introduction to deductive reasoning and proof is also taught.

♦ Advanced Algebra

Class Type:	Elective-Required for 4-year college acceptance.
Grade Level:	10-12
Credit:	1
Pre-requisite:	Algebra 1 and Geometry
Extra Costs:	Graphing Calculator

Advance Algebra is an intermediate algebra course. Topics from Algebra and Geometry will be reviewed and expanded upon. Additional topics will include sequences, variations, matrices, quadratics, complex numbers, functions, fractional exponents, logarithms, some trigonometry, polynomials, conic sections, series, combinations, and statistics.

♦ Honors Advanced Algebra

Class Type:	Elective
Grade Level:	10-12
Credit:	1
Pre-requisite:	Algebra 1 and Geometry, strong Math background
Extra Costs:	Graphing Calculator

Honors Advanced Algebra is an extended Advanced Algebra course. Topics will be covered in greater depth and will cover more application problems. Additional topics beyond Algebra will include sequences, variations, matrices, quadratics, complex numbers, functions, fractional exponents, logarithms, some trigonometry, polynomials, conic sections, series, combinations, and statistics.

◆ Applied Mathematics 1

Class Type: Elective
Grade Level: 11-12
Credit: 1/2
Pre-requisite: Algebra 1 and Basic Geometry or Geometry
Extra Costs: Calculator ($15)

> This class is designed to help high school students develop and refine job-related math skills. Topics of discussion include problem solving techniques, estimation, signed numbers, metric system, solving systems, basic geometry, and reading graphs.

◆ Applied Mathematics 2

Class Type: Elective
Grade Level: 11-12
Credit: 1/2
Pre-requisite: Applied Mathematics 1
Extra Costs: Calculator ($15)

> This course is a continuation of Applied Math I. Topics of discussion include area and perimeter, volume, slope and linear equations, basic concepts of surface area, exponents and scientific notation, radicals, Pythagorean Theorem, simple and compound interest.

◆ College Algebra

Class Type: Elective, Dual Credit Option
Grade Level: 11-12
Credit: 1/2
Pre-requisite: Advanced Algebra, strong math background
Extra Costs: Graphic Calculator

> This course is an advanced mathematics course. Emphasis will be placed on the study of relations and functions which includes equations and inequalities; complex numbers; polynomial, rational, exponential, and logarithmic functions; systems of equations; matrices and determinants; sequences and summation.

◆ Trigonometry

Class Type: Elective, Dual Credit Option
Grade Level: 11-12
Credit: 1/2
Pre-requisite: College Algebra or recommendation from Advanced Algebra Teacher
Extra Costs: Graphic Calculator

> This course is an advanced mathematics course. The study of trigonometry includes an introduction to angle measure, trigonometric and inverse trigonometric functions, trigonometric identities and equations, polar coordinates, and applications. If time permits a study of conic sections will be included.

◆ Probability and Statistics

Class Type: Elective, Dual Credit Option
Grade Level: 11-12
Credit: 1/2
Pre-requisite: Advanced Algebra or if currently enrolled in Advanced Algebra, 2nd semester only
Extra Costs: Graphic Calculator

This course is an advanced mathematics course. This course includes a study of methods used to determine the probability that an event will happen and methods for handling and analyzing statistical data. This course is intended for students interesting in fields such as mathematics, science, engineering, business, education, psychology, sociology, and medicine.

◆ Calculus I, II, III

Class Type: Elective, Dual Credit
Grade Level   12 (taught at the college)
Credit: 1/2 each course
Pre-requisite: C or better in College Algebra and Trigonometry
Extra Costs: Graphic Calculator