2020-2021

Mathematics

A basic tenet of the math curriculum is that all students will study a broad range of mathematics, including basic concepts of algebra, geometry, probability, statistics, and the underpinnings of higher level mathematics, with strong emphasis in developing problem solving, mathematical communication, and reasoning skills.

The McQueen High School Math Department believes that completion of homework and good attendance is a major factor in a student's success in mathematics.

Information Regarding Placement of Students in Mathematics Courses: Prerequisites

To facilitate proper placement and subsequent success of students in mathematics courses, each course prerequisite will be enforced. Prerequisites are listed in the description of each individual course. All math courses require students to have successfully completed the previous course in the math sequence. Successful completion means that students passed BOTH semesters of the previous course.

Important Information for 8th Grade Students

Eighth grade students enrolled in Algebra 1 should select their math course based on the following:

- The math course sequence at McQueen does not allow for 9th graders to take regular Geometry, only Formal Geometry or Algebra 1.
- Formal Geometry is a challenging course requiring abstract thinking. Even though a student passed Algebra 1 in 8th grade, he or she may not be ready for this vigorous course. We have found that students without very strong skills in Algebra struggle in Formal Geometry.
- 9th graders who opt to repeat Algebra 1 after taking it in 8th grade will be placed into a special section of Algebra 1 dubbed "Algebra A1X." The purpose of A1X is to strengthen the student's Algebra knowledge and skills, improve abstract thinking and critical reasoning, and prepare students to enter Formal Geometry int heir 10th grade year.

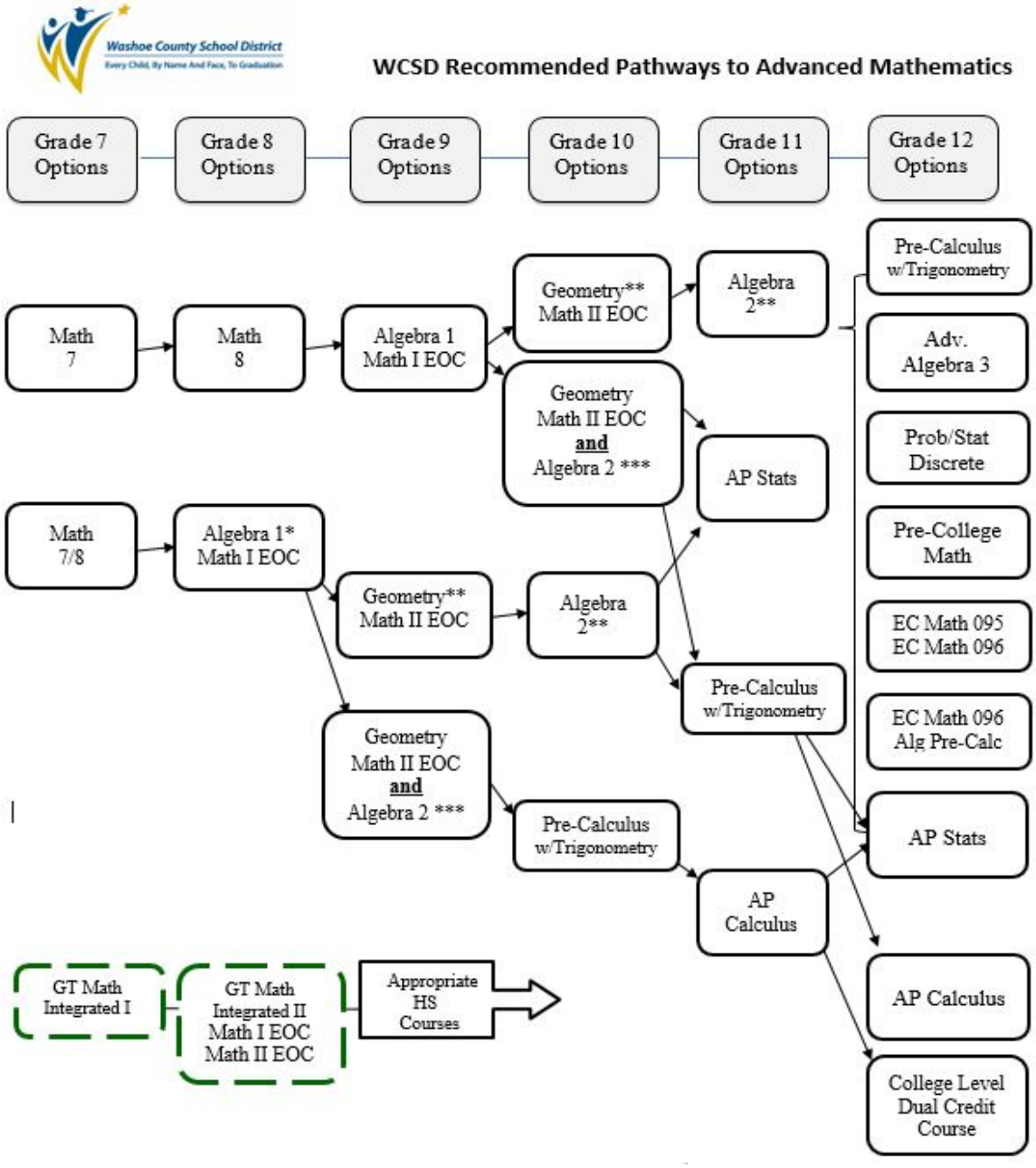
Math Course Sequences

- Students who do not plan to enroll in Calculus in their senior year should not accelerate their study of mathematics by taking Formal Geometry in the ninth grade or by concurrent registration in two math courses.
- The following chart represents typical math course sequences available to students.
- Please check with your institution of higher education and your counselor to determine the best choice for you.
- Four-year colleges and universities expect that students planning to attend college take math at least through the Algebra 2 level.
- College-bound students should make an effort to enroll in Trig/Pre-Calc (or higher) during their senior year.

WCSD Recommended Pathways to Advanced Mathematics

The chart below represents typical math course sequences students may follow in order to earn the four (4) math credits required for graduation. It may help to note that the high school sequence begins with Algebra 1, and then continues through Geometry, and Algebra 2. Students wishing to study more advanced mathematics may then continue with Trigonometry/Pre-Calculus, Statistics, and Calculus in either high school or college. While some students are prepared to take advanced mathematics in high school, many do not reach that level until college.

Freshmen at McQueen who successfully completed Algebra 1 in 8th grade may ONLY take Formal Geometry as a 9th grader. Regular Geometry is not an option for Freshmen.



* High School credit is not awarded for high school level courses taken prior to 9th grade.
Middle School students must earn a qualifying grade in Algebra 1 to progress on to the next course in sequence.
** Students must take Formal Geometry (H) and Honors Algebra 2 (H)
***Students can concurrently enroll in Formal Geometry and Honors Algebra 2 for Acceleration.
Ø ***All students must earn credits in Algebra 1 (and take the Math I NV EOC Exam at the end of S2), Geometry (and take the Math II NV EOC Exam at the end of S2) and Algebra 2 before enrolling in any of the senior level courses. Some senior level courses have other pre-requisites (see the Course Descriptions).***

Math Course Descriptions

Algebra 1
Foundations in Algebra 1

Course Fee: $5

Algebra 1 Course #2201-2202
Foundations in Algebra 1 Course #7769-7770 (for Special Education Students only - no course fee)

Prerequisite: Successful completion of all semesters of Math 7 and Math 8 or Math 7/8.

Full Year = 1 math credit

This is a one-year course designed to teach the fundamentals of elementary algebra. This course lays the foundation of knowledge and skills to meet the Nevada Academic Content Standards in Mathematics (NVACS) for high school students. A strong foundation in algebra is needed for subsequent mathematics courses. The NVACS studied include all 5 Domains: Relationships between Quantities and Reasoning with Equations, Linear and Exponential Relationships, Descriptive Statistics, Expressions and Equations and Quadratic Functions and Modeling. Throughout the year, students will be expected to develop the ability to reason and communicate mathematically, apply learned concepts to new problem-solving situations and exhibit increased confidence in their ability to solve mathematical problems. As a part of this course, students are required to take the Nevada End Of Course Final for Math I (Algebra 1) as the semester 2 final exam.

Geometry
Foundations in Geometry

Course Fee: $5

Geometry Course #2211-2212
Foundations in Geometry Course #7771-7772 (for Special Education Students only - no course fee)

Prerequisite: Successful completion of all semesters of Algebra 1 (or all semesters of the 2-year course).

Full Year = 1 math credit

This is a one-year course that will cover the following topics through emphasis on basic geometric proofs, axioms, postulates and theorems, plane geometric figures, right triangles with trigonometry, constructions, congruence and similarity, circles, coordinate and transformational geometry, inductive and deductive reasoning, three-dimensional geometry, and probability. Emphasis is on the development of deductive reasoning skills. Students will also review algebraic techniques, work on realistic problems, and use technology when possible. As a part of this course, students are required to take the Nevada End Of Course Final for Math II (Geometry) as the semester 2 final exam.

Formal Geometry (Honors)

Course Fee: $5

Course #2215-2216

Prerequisite: Successful completion of all semesters of Algebra 1. Admission into Formal Geometry will be based on the student's previous performance in addition to teacher recommendation, student's desire to learn and work ethic.

Full Year = 1 math credit (Honors)

This is a one-year course that will cover the following topics through emphasis on basic geometric proofs, axioms, postulates and theorems, plane geometric figures, right triangles with trigonometry (Law of Sine and Cosine), constructions, congruence and similarity, circles, coordinate and transformational geometry, inductive and deductive reasoning, three-dimensional geometry, and probability. Emphasis is on the development of deductive reasoning skills. Students will also review algebraic techniques, and work on realistic problems. An ability to think abstractly is critical for successful completion of this course. As a part of this course, students are required to take the Nevada End Of Course Final for Math II (Geometry) as the semester 2 final exam.

Algebra 2
Foundations in Algebra 2

Course Fee: $5

Algebra 2 Course #2221-2222
Foundations in Algebra 2 Course #7779-7780 (for Special Education Students only - no course fee)

Prerequisite: Successful completion of all semesters of Algebra 1 and Geometry or Formal Geometry.

Full Year = 1 math credit

This is a one-year course, which strengthens and expands on the techniques and concepts learned in Algebra 1. This course will reinforce the student's problem solving and algebraic skills in preparation for advanced mathematics courses. The major topics of study are relations and functions, domain and range of parent functions systems of nonlinear equations, polynomials and polynomial functions, complex numbers, quadratic equations, rational and radical functions, exponential and logarithmic functions, statistics, and matrices. Throughout the year, students will continue to develop the ability to reason and communicate mathematically, apply learned concepts to new problem-solving situations, and exhibit increased confidence in their ability to solve mathematical problems.

Algebra 2 (Honors)

Course #2227-2228

Course Fee: $5

Prerequisite: Successful completion of all semesters of Algebra 1 and Formal Geometry. Admission into Algebra 2 (H) will be based on the student's previous performance in addition to teacher recommendation, student's desire to learn and work ethic.

Full Year = 1 math credit (Honors)

This is a one-year course, designed for students with a strong understanding of the concepts learned in Algebra 1 and Geometry. This course will build upon the student's problem solving and algebraic skills in preparation for advanced mathematics courses through a course that addresses the rigor expected of an honors level course. The major topics of study are relations and functions, domain and range of parent functions, systems of nonlinear equations, polynomials and polynomial functions, complex numbers, quadratic equations, rational and radical functions, exponential and logarithmic functions, statistics, and matrices. Throughout the year, students will continue to develop the ability to reason and communicate mathematically, apply learned concepts to new problem-solving situations, and exhibit increased confidence in their ability to solve mathematical problems.

All students must earn credits in Algebra 1, Geometry and Algebra 2 before enrolling in any of the following courses. Some courses have additional pre-requisites (see Course Description).

Pre-Calculus with Trigonometry (Honors)

Course #2231-2232

Course Fee: $5

Prerequisite: Successful completion of all semesters of Algebra 2. Admission into Pre-Calculus with Trigonometry will be based on the student's previous performance in addition to teacher recommendation, student's desire to learn and work ethic.

Full Year = 1 math credit (Honors)

This is a one-year course designed to teach the fundamentals of pre-calculus with trigonometry. The course begins with a review of the basics of functions, polynomial functions and equations, radical and rational functions and equations and exponential and logarithmic functions. Trigonometry topics are trigonometric functions; applications of trigonometric functions, trigonometric identities, polar coordinates, graphs of polar equations, complex numbers, powers and roots. Additional topics are vectors, sequences and series, conics, inverse and composition of functions, and limits. Throughout the year, students will continue to develop the ability to reason and communicate mathematically, apply learned concepts to new problem-solving situations, and exhibit increased confidence in their ability to solve mathematical problems. A graphing calculator is required.

Probability, Statistics and Discrete Mathematics

Course #2243-2244

Course Fee: $5

Prerequisite: Successful completion of all semesters of Algebra 1, Geometry and Algebra 2.

Full Year = 1 math credit

This is a one-year course designed to provide students with opportunities to explore concrete concepts, probability, statistics and discrete mathematics. The first semester consists of studying set theory, probability, statistics, experimental design, sampling techniques, distributions, measures of center, spread and position. Students are provided with opportunities to collect and analyze data relevant to students and draw conclusions based on this analysis. The second semester will involve hypothesis testing, confidence intervals, correlation, and linear regression, finance, and number representations. Throughout the course, emphasis will be given to providing students with numerous opportunities to model problem situations using hands-on materials, graphing calculators, and computers. Students need to have completed the first semester of Probability, Statistics and Discrete Mathematics in order to continue into the second semester.

AP Statistics

Course #2271-2272

Course Fee: $5
$94.00 for AP Exam

Prerequisite: Successful completion of all semesters of Algebra 2.

Full Year = 1 math credit (Advanced Placement)

This is a one-year course designed to offer Statistics to those students wishing to study the topic at or on par with the university level. The major topics of study are Inferential and Descriptive Statistics, Data Collection and Analysis, Data Distributions, Probability, and Experimental Design. Students are required to take the AP exam in May. All AP exams have a cost associated with them. A graphing calculator is required.

AP Calculus AB

Course #2255-2256

Course Fee: $5
$94.00 for AP Exam

Prerequisite: Successful completion of all semesters of Pre-Calculus with Trigonometry.

Full Year = 1 math credit (Advanced Placement)

Advanced Placement Calculus AB is a one-year course designed for those students wishing to study mathematics on the collegiate level. The major topics of study are functions, limits and continuity, derivatives and applications of the derivative, integrals, techniques of integration, and applications of the integral, and inverse functions. This is for students who have completed the equivalent of four years of college preparatory mathematics. Students apply skills and information acquired in previous math courses. Students are required to take the AP exam in May. All AP exams have a cost associated with them. A graphing calculator is required.

AP Calculus BC

Course #2257-2258

Course Fee: $5
$94.00 for AP Exam

Prerequisite: Successful completion of all semesters of Pre-Calculus with Trigonometry.

Full Year = 1 math credit (Advanced Placement)

Advanced Placement Calculus BC is a one-year course designed for those students who have completed the equivalent of four years of college preparatory mathematics and have working knowledge of functions: linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric and piecewise-defined. The major topics of study are functions, graphs and limits including parametric, polar and vectors, derivatives and applications of derivatives, integrals, applications of integrals, and fundamental Theorem of Calculus, anti-differentiation and applications of anti-differentiation, and polynomial approximations and series. Students are required to take the AP exam in May. All AP exams have a cost associated with them. A graphing calculator is required.

College Readiness Classes

Pre-College Math

Course #2229-2230 Course Fee: $5

Prerequisite: Juniors and Seniors who have attempted Algebra 2 but need additional time in developing their fundamental skills in math before moving on to upper level mathematics courses.

Full Year = 1 math credit

This is a one-year mathematics course designed for juniors or seniors that wish to take more mathematics before taking Pre-Calculus with Trigonometry or for seniors that do not qualify for Math 095. Topics covered include the fundamental operations on real numbers, linear equations and inequalities, systems, linear programming, rational exponents, polynomials, rational expressions, roots and radicals, and quadratics. Students will use MathXL and should have access to a computer to participate in this class. At this time this course is not endorsed by the NCAA, if you have questions about this please contact your school counselor.

Early College Math 095

Course #2010 Course Fee: $5

Prerequisite: Seniors with successful completion of Algebra 2 in both semesters and meet the criteria set by UNR in the Memorandum of Understanding.

One Semester = 0.5 math credit

This is a one-semester mathematics course designed to help students place into Math 096 or equivalent in college. Topics covered include the fundamental operations on real numbers, first-degree equations, inequalities in one variable, polynomials, integer exponents, solving quadratic equations by factoring. Students will be enrolled in MyMathLab and must have access to a computer to participate in this class. At this time this course is not endorsed by the NCAA, if you have questions about this please contact your school counselor.

Early College Math 096

Course #2011 Course Fee: $5

Prerequisite: Seniors with successful completion of Algebra 2 in both semesters and meet the criteria set by UNR in the Memorandum of Understanding and successful completion of Math 095.

One Semester = 0.5 math credit

This is a one-semester mathematics course designed to help students place into a credit bearing math course in college. Topics covered include graphing linear equations, solving systems of linear equations in two variables and linear inequalities, solving quadratic, rational and radical equations, factoring, simplifying rational and radical expressions and complex numbers, determining the equations of lines and solving application problems. Students will be enrolled in MyMathLab and must have access to a computer to participate in this class. At this time this course is not endorsed by the NCAA, if you have questions about this please contact your school counselor.

Algebraic Pre-Calculus

Course #2008 Course Fee: $5

Prerequisite: Seniors with successful completion of Algebra 2 in both semesters and meet the criteria set by UNR in the Memorandum of Understanding.

One Semester = 0.5 math credit

This is a one-semester course designed to follow Math 096 to help students place into a credit bearing math course in college. The major topics of this semester of study are exponential and logarithmic functions, and complex numbers, powers and roots, sequences and series, domain and range of advanced functions, notation: set, interval and inequality, composition of functions, polynomial equations and inequalities, rational equations and inequalities, matrix operations and applications, and system of linear equations in three variables. At this time this course is not endorsed by the NCAA, if you have questions about this please contact your school counselor.

Special Education Math Classes

Foundations in Algebra 1 (See Course Description Above)

Course #7769-7770

Foundations in Geometry (See Course Description Above)

Course #7771-7772

Foundations in Algebra 2 (See Course Description Above)

Course #7779-7780

Transition Math

Course #7765-7766

Full Year = 1 math credit

This course is for the third and/or fourth year high school student receiving special education services and may be repeated once for credit (total 2 credits). This course is designed to cover a wide number of mathematical topics/concepts over a two-year period. In the even-numbered years (e.g. 2016-17, 2018-19, etc.) the curriculum will focus on consumer applications, including earning money, buying food, shopping, household budgeting, car maintenance/repair costs, home improvement, travel, personal budgeting, banking and investing, paying taxes, and career preparation. In the odd-numbered years (e.g. 2017-18, 2019-20, etc.) the curriculum will focus on the world of work, including skills students need on the job such as wages, benefits, kinds of businesses, human resource departments, business travel, corporate banking, operating expenses, business management, casualty insurance, government regulations, risks for business owners, sales and marketing, and mail-order businesses. This course does not meet the requirements for the End of Course exams in mathematics.

Bridge to Algebra

Course #7767-7768

Full Year = 1 math credit

This course is for the first-year high school student receiving special education services. It is designed to assist in the transition to Algebra 1. The curriculum will introduce algebraic expressions and linear equations; applied through a review of operations on integers, fractions, decimals, percentages, and radicals. Students explore relations and functions using equations, tables, and graphs. After successful completion of Bridge to Algebra a student may proceed to Algebra 1, or equivalent. This course does not meet the requirements for the End of Course exams in mathematics.