MATHEMATICS

* Course descriptions that are shaded are not being offered.
* Students are required to earn 4 credits of mathematics in the following areas:
* 1.5 credits in Algebra 1
* 1 credit of Geometry
* 1 credit of Algebra 2
* .5 credit of a math or math - related course in their final year

 (Possible courses outside the math department are: Woods 1, Furniture Design & Construction, Engineering, Architectural Drawing, Accounting 1, Accounting 2, Personal Finance, Chemistry (if not used for Science credit), AP Chemistry (if not used for Science credit), Physics (if not used for Science credit), AP Physics (if not used for Science credit), AP Computer Science courses and enrollment in a Wilson Talent Center course.

**Algebra 1** 3 trimesters Grade Level: 9-12

Course # 1101 Prerequisites: None

 # 1102

 # 1103

Students will study number properties, linear functions, quadratic functions, exponential functions, and bivariate data.

**Algebra 2** 2 trimesters Grade Level: 10 – 12

Course # 1301 Prerequisites: Algebra 1 & Geometry

 # 1302

Students will continue their study of Algebra by modeling situations and solving equations and systems of rational, exponential, quadratic, trigonometric, and logarithmic functions.

**AP Calculus** 3 trimesters Grade Level: 11 - 12

Course # 1501 Prerequisites: B or better in

 # 1502 Pre-calculus Functions and

 # 1503 Pre-calculus Trigonometry and teacher recommendation

Advanced Placement Calculus is a yearlong course of study on the two main topics of calculus: the derivative and the integral. A study of limits is also included along with applications of derivatives and integrals. The rigorous pace of this class will demand a serious commitment of time outside of school. The curriculum is designed to prepare students for the AP Calculus AB exam in May, possibly earning college credit.

**AP Statistics** 3 trimesters Grade Level: 10 – 12

Course # 1504 Prerequisites: Satisfy ***one*** of the

 # 1505 options below:

 # 1506 1) Successful completion of a

 Precalculus course and teacher

 recommendation

2) B or better average in Algebra 2 and teacher recommendation

AP Statistics is a yearlong course covering analyzing data, planning a study, producing models, and statistical inference. Students who successfully complete the AP exam will receive credit and/or advanced placement in a one-semester college statistics course.

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## **Coordinate Geometry** 1 trimester Grade Level: 10 – 12

Course # 1403 Prerequisites: Algebra 2 or teacher recommendation

 Recommendation:

 C or better in

 Algebra 2

Students will cover topics related to conic sections, polar and rectangular coordinates, evaluating parametric equations, matrices, and graphing parametric equations.

**Geometry** 2 trimesters Grade Level: 9 – 12

Course # 1201 Prerequisites: Algebra 1

 # 1202

Students will study properties of and relationships between lines, polygons, and circles, as well as the effects of transformations on these geometric objects. Logical reasoning (proofs) will be used to verify properties previously learned and to make new connections.

## **Honors Pre-Calculus A** 1 trimester Grade Level: 10 – 12

Course # 1401 Prerequisites: Algebra 2 or teacher recommendation

 Recommendation:

 B or better in

 Algebra 2

Students will cover topics related to exponential, logarithmic, and rational functions. Students will also discuss quadratic functions and higher degree polynomial relationships. The rigorous pace of this class will demand a serious time commitment outside of school. Students in this course are preparing for college level classes in college algebra and calculus. Earning at least a B in this class is required for enrollment in AP Calculus at Mason High School.

## **Honors Pre-Calculus B** 1 trimester Grade Level: 10 – 12

Course # 1402 Prerequisites: Algebra 2, Honors Pre-Calculus A or teacher recommendation

 Recommendation:

 B or better in

 Algebra 2

Students will cover topics related to circle trigonometry and trigonometric identities. The rigorous pace of this class will demand a serious time commitment outside of school. Students taking this course are preparing for college level classes in college algebra and calculus. Earning at least a B in this class is required for enrollment in AP Calculus at Mason High School.

## **Polynomials, Trig and Stats** 1 trimester Grade Level: 10 – 12

Course # 1404 Prerequisites: Algebra 2

This course will cover circle trigonometry, polynomials, and statistics. Students will explore the relationship between right triangle trigonometry and circle trigonometry. This course will expand student’s knowledge of functions and imaginary and complex numbers will be studied. Lastly, students will investigate statistical studies and randomness. This course is intended for students who are college-bound but not necessarily calculus-bound.

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