

Mathematics

Course Offerings by Grade

9th Grade	10th Grade	11th Grade	12th Grade
Sem1: Algebra 1 Essentials and Sem2: Geometry Essentials A (or STEM Geometry A)	Sem 1: Geometry Essentials B (or STEM Geometry B) and Sem 2: Algebra 1 Essentials B	Sem1: Algebra 2 A and Sem2: Algebra 2 B	Math Elective/s
Sem1: Algebra 1 A and Sem2: Geometry A (or STEM Geometry A)	Sem1: Geometry B (or STEM Geometry B) and Sem2: Algebra 1 B	Sem1: Algebra 2/Trig A and Sem2: Algebra 2/Trig B	Sem1: *Pre-Calculus A and Sem 2: *Pre-Calculus B
Sem1: Algebra 2/Trig A and Sem 2: Geometry A (or STEM Geometry A)	Sem1: Geometry B (or STEM Geometry B) and Sem 2: Algebra 2/Trig B	Sem1: *Pre-Calculus A and Sem2: *Pre-Calculus B	Sem1: *AP Calculus A and Sem2: *AP Calculus B

Math Electives

Probability & Statistics

*College & Career Ready Math

*Laude Courses

*College & Career Ready Math (TC) .5

*CAPP Pre-Calculus 1.0

*AP Calculus 1.0

Primary Career Clusters in Mathematics

- Architecture and Construction
- Finance
- Health Science
- Science, Technology, Engineering & Mathematics (STEM)

* There are math connections to all 16 career clusters – please see your counselor or your math teacher to help make those connections.

Architecture and Construction	Finance	Health Science	Science, Technology, Engineering and Mathematics (STEM)
Algebra 1	Algebra 1	Algebra 1	Algebra 1
Geometry/STEM Geometry	Geometry/STEM Geometry	Geometry/STEM Geometry	Geometry/STEM Geometry
Algebra 2 or Algebra 2/ Trig	Algebra 2 or Algebra 2/ Trig	Algebra 2 or Algebra 2/ Trig	Algebra 2/Trig
*CAPP Pre-Calculus	*CAPP Pre-Calculus	*CAPP Pre-Calculus	*CAPP Pre-Calculus
*College & Career Ready Math	Probability & Statistics	*College & Career Ready Math	*College & Career Ready Math
*AP Calculus	*AP Calculus	Probability & Statistics	Probability & Statistics
		*AP Calculus	*AP Calculus

MATHEMATICS

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Algebra 1 Essentials A & B

Course Code: MAAEA/MAAEB
 Grade: 9-10
 Prerequisite: Consultation with previous math teacher recommended
 Course Length: Two semesters
 Course Credit: .5 each semester (total of 1.0)
 Offered: Yearly

Recommended calculator: Scientific as a minimum—graphing would be beneficial.

What you will learn in this course:

For students entering a university, technical/vocational school, the military, or the job market immediately after high school. Algebra 1 Essentials includes the meanings and uses of formulas, linear equations in one and two unknowns, graphing linear relations in the rectangular coordinate system and quadratic equations. This course will focus on the fundamental algebraic skills and applications.

How you will learn in this course:

Instructional practices promote mathematical thinking through the use of problem situations that involve individual students and teams of students in investigating, conjecturing, applying, evaluating, and communicating mathematical ideas. There is an emphasis on the use of graphics calculators.

Why this course is important:

The materials develop and refine job-related math skills in various career areas including industry and trade.

Algebra 1 A & B

Course Code: MAA1A/MAA1B
 Grade: 9-10
 Prerequisite: Consultation with previous math teacher recommended
 Course Length: Two semesters
 Course Credit: .5 each semester (total of 1.0)
 Offered: Yearly

Note: A semester 1 failure will result in placement in Algebra I Essentials B.

Recommended calculator: Scientific as a minimum—graphing would be beneficial.

What you will learn in this course:

Recommended for students considering entering a four-year college immediately after high school. Algebra 1 is a course that provides the principal concepts necessary for all mathematics courses beyond the arithmetic level. Equation solving techniques which are vital to all future mathematics and sciences are developed. Algebra 1 includes the meanings and uses of formulas, linear equations in one and two unknowns, graphing linear relations in the rectangular coordinate system and quadratic equations.

How you will learn in this course:

You will learn in a variety of ways, including teacher presentation, cooperative learning, class discussion, and student practice.

Why this course is important:

This course is a requirement for admission to college. It is also a prerequisite for Geometry.

Geometry Essentials A & B

Course Code: MAGMA/MAGMB
 Grade: 9-10
 Prerequisite: Successful completion of an Algebra first semester course
 Course Length: Two semesters
 Course Credit: .5 each semester (total of 1.0)
 Offered: Yearly

Recommended calculator: Scientific as a minimum—graphing would be beneficial.

What you will learn in this course:

For students entering a university, technical/vocational school, the military, or the job market immediately after high school. Geometry is the study of a mathematical system involving points, lines and planes. Emphasis is on the development of logic, reasoning and proof. This course will focus on the fundamental geometric skills and applications.

How you will learn in this course:

Instructional practice promote mathematical thinking through the use of problem situations that involve individual students and teams of students in investigating, conjecturing, applying, evaluating, and communicating mathematical ideas.

Why this course is important:

This course reinforces the concepts in Algebra 1 Essentials as well as continues the sense-making idea introduced in the first course.

Geometry A & B

Course Code: MAGEA/MAGEB
 Grade: 9-10
 Prerequisite: Successful completion of an Algebra first semester course
 Course Length: Two semesters
 Course Credit: .5 each semester (total of 1.0)
 Offered: Yearly

Note: A semester 1 failure will preclude the student from advancing to semester 2. A second semester failure will preclude the student from advancing to Algebra 2.

Recommended calculator: Scientific as a minimum—graphing would be beneficial.

What you will learn in this course:

Recommended for students considering entering a four-year college immediately after high school. Geometry is the study of a mathematical system involving points, lines, and planes. Emphasis is on the development of logic, reasoning and proof.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, cooperative learning, class discussion, and student practice.

Why this course is important:

This course is needed for admission to post-secondary schools. It is also a prerequisite for Algebra II.

STEM Geometry A & B

Course Code: MASGA/MASGB
 Grade: 9-10
 Prerequisite: Successful completion of Algebra 1A in 8th or 9th grade year with a grade of B or higher
 Course Length: Two semesters
 Course Credit: .5 each semester math & .25 each semester technology education credit (total of 1.5)
 Offered: Yearly

Note: A semester 1 failure will preclude the student from advancing to semester 2. A 2nd semester failure will preclude the student from advancing to Algebra 2.

Recommended calculator: Scientific as a minimum—graphing would be beneficial.

What you will learn in this course:

For students with a serious interest in mathematics, science or engineering. Students need to show a willingness to work hard and be ready to accept a challenge. Geometry is the study of a mathematical system involving points, lines, and planes. Emphasis is on the development of logic, reasoning, and mechanical and technological applications.

How you will learn in this course:

You will learn in a variety of ways including hands on experience, projects, written assignments, guest speakers, teacher presentation, cooperative learning and class discussion. The course will have an emphasis on STEM learning.

Why this course is important:

This course is needed for admission to post-secondary schools. It is also a prerequisite for Algebra 2.

Algebra 2

Course Code: MAA2A/MAA2B
 Grade: 11-12
 Prerequisite: Successful completion of Algebra 1 & Geometry
 Course Length: One year
 Course Credit: 1.0
 Offered: Yearly

Recommended calculator: Scientific as a minimum—graphing.

What you will learn in this course:

For students entering a university, technical/vocational school, the military, or the job market immediately after high school. Geometry is the study of a mathematical system involving points, lines and planes. Emphasis is on the development of logic, reasoning and proof. This course will focus on the fundamental geometric skills and applications.

How you will learn in this course:

Instructional practices promote mathematical thinking through the use of problem situations that involve individual students and teams of students in investigating, conjecturing, applying, evaluating, and communicating mathematical ideas. The course emphasizes mathematical modeling concepts including data collection, representation, interpretation, prediction, and simulation. Students explore, conjecture, verify, apply, evaluate, and communicate mathematical ideas.

Why this course is important:

This course reinforces the concepts in Algebra 1 Essentials and Geometry Essentials as well as continues the sense-making ideas introduced in the two previous courses. Each year the curriculum features multiple ideas from four strands: algebra and functions, geometry and trigonometry, statistics and probability, and discrete mathematics.

Algebra 2/Trig

Course Code: MAATA/MAATB
 Grade: 10-12
 Prerequisite: Successful completion of Algebra 1 and Geometry
 Course Length: One year
 Course Credit: 1.0
 Offered: Yearly

Note: A semester 1 failure will preclude the student from advancing to semester 2. Also articulated for advanced standing LTC.

Recommended calculator: Graphing calculator is required. A TI-84 is suggested, but a TI83+ is sufficient.

What you will learn in this course:

For students entering a university, technical/vocational school, the military, or the job market immediately after high school. Algebra 2 is an extension of first-year algebra to more complicated applications and further topics such as quadratic equations, functions, exponents, logarithms and inequalities. This course will focus on the fundamental advanced algebraic skills and applications.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, cooperative learning, class discussion, and student practice. A graphics calculator (TI83 Plus) is an essential part of this class. Student ownership is required.

Why this course is important:

Algebra II is a requirement for admissions to most colleges. If you like mathematics, or are planning on majoring in a mathematics related field in college, you should take Algebra 2.

***CAPP Pre-Calculus**

Course Code: MAPCA/MAPCB
 Grade: 11-12
 Prerequisite: Algebra 2
 Course Length: One year
 Course Credit: 1.0
 Offered: Yearly

*Laude Course—Class of 2019 and beyond

Recommended calculator: Graphing calculator is required. A TI

-84 is suggested, but a TI83+ is sufficient.

This course is offered through Lakeland University at a cost of \$300 to the student for 3 college credits that are transferable to colleges and universities. It is Lakeland University course MAT 162 Pre-Calculus. Seniors will need to request a college transcript from Lakeland University to send to their respective college or university. Please go to page 88 for more information.

What you will learn in this course:

The elementary polynomial, trigonometric, exponential, and logarithmic functions are developed and reviewed.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, cooperative learning, class discussion, and student practice. A graphics calculator (TI83 Plus) is an essential part of this class. Student ownership is required.

Why this course is important:

If you plan on going to college and majoring in engineering, accounting, or another mathematically related field, you should take Pre-Calculus.

***Advanced Placement Calculus AB**

Course Code: MACLA/MACLB
Grade: 12
Prerequisite: Pre-Calculus
Course Length: One year
Course Credit: 1.0
Offered: Yearly

*Laude Course—Class of 2019 and beyond

Please see page — for more information on the AP Program.

Recommended calculator: Graphing calculator is required. A TI-84 is suggested, but a TI83+ is sufficient.

Fee: The AP test costs \$92.

What you will learn in this course:

The basic concepts of differential and integral calculus.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, cooperative learning, class discussions, and student practice. Technology, in particular the graphics calculator, will play an important role in developing concepts and solving problems.

Why this course is important:

If you plan on going to college and majoring in engineering, accounting, math related field, you should take calculus. In May, you will take the Calculus College Board Advanced Placement test. If you earn a 3, 4, or 5 on this test, you will receive college credit or advanced placement in your university, depending on established practices.

Probability & Statistics

Course Code: MAPSA
Grade: 10-12
Prerequisite: Geometry course
Course Length: One semester
Course Credit: 0.5
Offered: Yearly

Recommended calculator: Graphing calculator is required. A TI-84 is suggested, but a TI83+ is sufficient.

What you will learn in this course:

You will study many ways to organize data including graphs, curves, and scatter plots. You will describe the data using patterns and numbers. Single variable and multivariable data will be covered. Accurate collection of data and running of experiments will be discussed. Probability, including randomness, simulation and other probability models will conclude the semester.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, group activities/labs, class discussion, projects and student practice.

Why this course is important:

The ability to understand and interpret data is a skill that will make you a better consumer, citizen and employee. The use of statistics is used in all jobs in order to evaluate situations and make important decisions.

***College and Career Ready Math**

Course Code: MATRA/MATRB
Grade: 11-12
Prerequisite: Algebra 2 or Algebra 2/Trig
Course Length: One Semester
Course Credit: 0.5
Offered: Yearly

*Laude Course—Class of 2019 and beyond

Recommended calculator: Graphing calculator is required. A TI-84 is suggested, but a TI83+ is sufficient.

This course is transcribed with Lakeshore Technical College. Please see page — for more details.

What you will learn in this course:

This course will focus on strengthening and expanding Algebra and Geometry skills. The topics covered: fundamental algebraic manipulation; trigonometry and its applications; conic sections; polynomial functions: exponential functions: logarithmic functions; systems of equations; matrices; mathematical Induction; and radicals.

How you will learn in this course:

You will learn in a variety of ways including teacher presentation, cooperative learning, class discussion, lab experiments, direct application to problem solving situations and student practice. A graphics calculator is an essential part of this class. Student ownership is required.

Why this course is important:

This course is well suited for students who plan to further their education at a post-secondary institution but are not planning on taking Pre-Calculus or AP Calculus. Students will prepare for the transition into a college level math course, college entrance exam (ACT or SAT), and college placement tests (EMPT).