

2026-2027 ACADEMIC PROGRAM GUIDE

Achieving
Excellence,
Innovation,
& Empowerment
Together.

MATHEMATICS

Algebra
Algebra II
Algebra III
AP Calculus AB
AP Calculus BC
AP Statistics
Calculus III
Data, Probability & Statistics
Financial Algebra
Geometry
Linear Algebra
Pre-Calculus

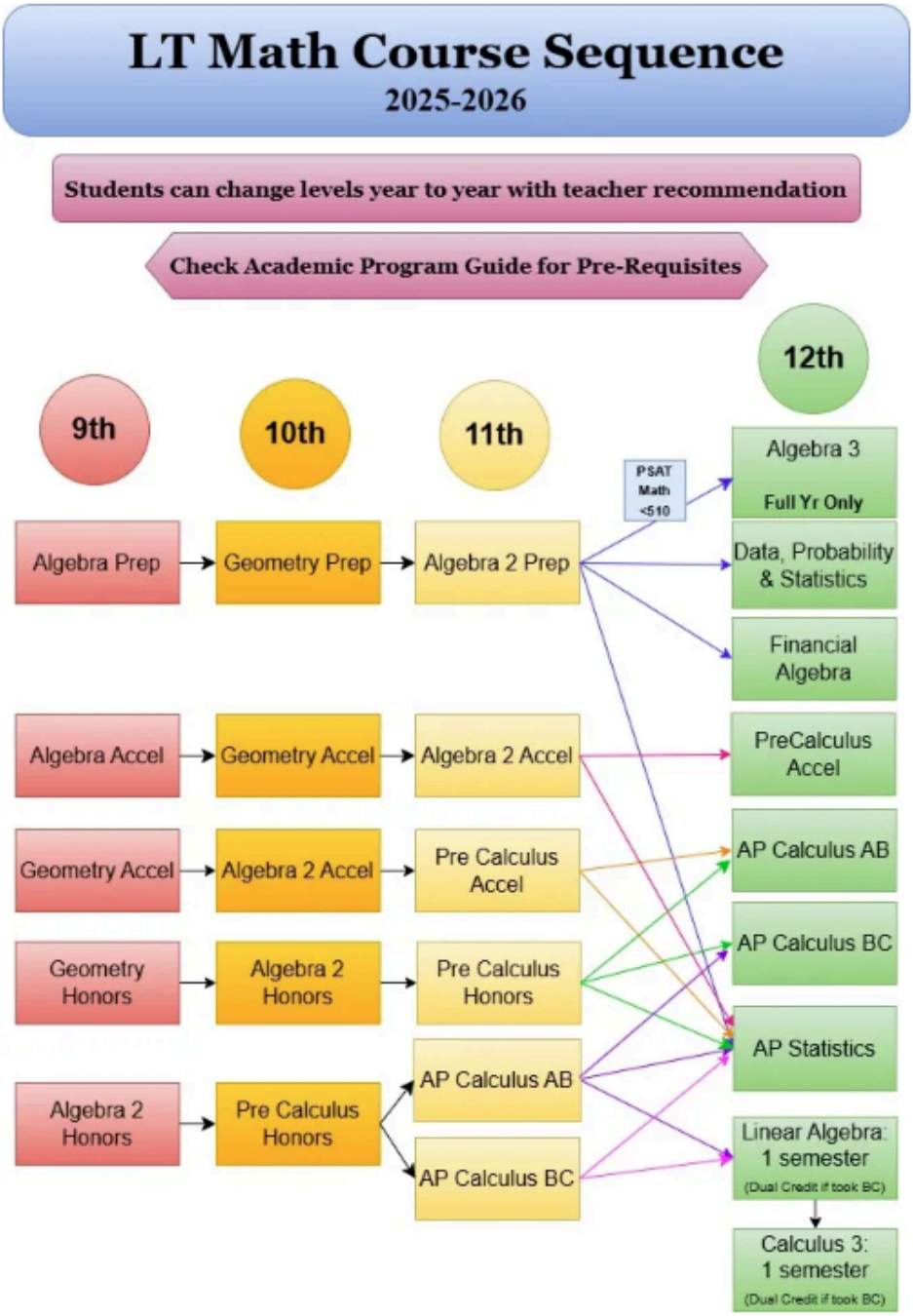
Office of Mathematics

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Mathematics Department Mission Statement

To use the content of Math to develop ALL students into lifelong learners; adept at critical thinking, problem solving and collaborating.



Office of Mathematics

The LTHS Mathematics Department has adopted the following eight principles in conjunction with both the Illinois State Standards and the Common Core State Standards. These principles and standards guide academic programs, courses and challenge students. Additionally, specific academic course standards have also been developed. These are distributed to students at the beginning of each semester or annual course.

LTHS Mathematics Principles

Common Core State Standards for Mathematical Practice

Standard I Make sense of problems and persevere in solving them.

Standard II Reason abstractly and quantitatively.

Standard III Construct viable arguments and critique the reasoning of others.

Standard IV Model with mathematics.

Standard V Use appropriate tools strategically.

Standard VI Attend to precision.

Standard VII Look for and make use of structure.

Standard VIII Look for and express regularity in repeated reasoning.

Math Department Homework Statement

Homework in mathematics serves to reinforce and extend learning that takes place in the classroom. It provides both students and teachers with valuable information about the progress of learning. Homework also gives students opportunities to:



- *Strengthen and practice their skills*
- *Assess their understanding of concepts*
- *Build independent learning habits, including utilizing resources like class notes and the class Canvas page*
- *Apply and explore concepts in different or unfamiliar situations*
- *Prepare for upcoming lessons by previewing new material*

Requirements

While a minimum of three years of high school mathematics is required for graduation, many students take four years of mathematics. The state of Illinois requires each student to take a Geometry course for one of the three required credits. It is suggested that students who desire to attend college follow requirements specific to their school of interest. Most state universities in Illinois require three years of mathematics through Algebra II for unconditional admission. Pre-Calculus may also be Required.

Calculator Requirements

All Math courses require a Texas Instruments TI-84+ graphing calculator. Students who are eligible for a fee waiver can borrow a calculator for each school year. They are available in the Bookstore at each campus. Please check with your student's math teacher if you have any questions.

Math Placement for Incoming Freshmen

The Math Division Chair evaluates the performance of each incoming student. LT will review the results and recommend further changes based on skills and support. Placement is based upon the following:

- Math course taken in 8th grade
- Grade in 8th grade math course
- Math standardized test scores
- Grade on first semester exam (if given)
- 8th-grade math teacher recommendation

Math Placement for LT Freshmen, Sophomores, Juniors and Seniors

The current LT math teacher will make a recommendation based on previous math classes completed and the prerequisites of the next course.

- If a student and/or parent wish to adjust a placement, the student and parent **consult first with the student's teacher** to review the current placement and determine if a change is warranted.
- After parents and students have reviewed the differences in levels and the reasons for level recommendation changes, parents and students have the final say in the decision.
- Changes are only made when space is available.

AP Math Options: *What should I take?*

AP Calculus AB/BC

AP Calculus AB and BC are challenging, college-level courses for students with strong precalculus skills who are ready to study advanced calculus concepts. AB is equivalent to a first-semester college calculus course, while BC moves at a faster pace and covers a full year of college calculus. These courses are especially valuable for students planning to pursue STEM, economics, or other majors that require higher-level math, and they provide a strong foundation for competitive college programs and careers in fields like engineering, computer science, and physics.

AP Statistics

AP Statistics is a rigorous, college-level math course designed for students who have successfully completed Algebra II and are ready to apply mathematical thinking to real-world situations. It is an excellent choice for students planning to pursue majors or careers in fields such as science, health, business, psychology, social sciences, or any area that relies on data literacy and decision-making. It is also a valuable option for students who want to strengthen their quantitative reasoning develop critical thinking through data analysis

Algebra Prep

Credit: 1
Level: III
Grade Offered: 9, 10
Annual: 9, 10 MA4136
Annual: 9, 10 MA4137
Prerequisite: None

This course intensively studies the language of algebra. Students begin their study of the real number system and its properties. The course is designed to convey an understanding of the meaning and use of variables, formulas, equations and inequalities, exponents, functions, graphs, and an introduction to probability and statistics. The fundamental processes with algebraic expressions are taught, including simple cases of factoring and work with algebraic fractions. The significance of problems and problem solving is emphasized throughout the course. Material covered in this course will not only provide students with a foundation of algebra to be applied in future courses, but will also prepare students for college level coursework.

Algebra Accel

Credit: 1
Level: IV
Grade Offered: 9
Annual: 9 MA4146
Annual: 9 MA4147
Prerequisite: 8th grade teacher recommendation and LT recommendation

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This course intensively studies the language of algebra. Students begin their study of the real number system and its properties. The course is designed to convey an understanding of the meaning and use of variables, formulas, equations and inequalities, exponents, functions, graphs, and an introduction to probability and statistics. The fundamental processes with algebraic expressions are taught, including simple cases of factoring and work with algebraic fractions. The significance of problems and problem solving is emphasized throughout the course. Material covered in this course will not only provide students with a foundation of algebra to be applied in future courses, but will also prepare students for college level coursework.



"Mathematics is about numbers, equations, or computations, or algorithms: it is about understanding."

~William Paul Thurston

Algebra II Prep

Credit: 1
Level: III
Grade Offered: 10, 11, 12
Annual: 10, 11, 12 MA6231
Annual: 10, 11, 12 MA6232
Prerequisite: Geometry (any level)

This course presents the topics contained in Algebra II and also includes the topics of polynomial functions, logarithmic functions, sequences, series, elementary probability, rational functions, and trigonometry topics . Problem solving with the graphing calculator is a major emphasis in this course.

Algebra II Accel

Credit: 1
Level: IV
Grade Offered: 9, 10, 11
Annual: 9, 10 MA7246
Annual: 9, 10 MA7247
Annual: 11 MA7241
Annual: 11 MA7242
Prerequisite: Geometry Accel, Geometry Honors or department approval with an A in both Geometry Prep and Algebra Prep

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This course presents the topics contained in Algebra II and also includes the topics of polynomial functions, logarithmic functions, sequences, series, elementary probability, and rational functions. Problem solving with the graphing calculator is a major emphasis in this course.

Algebra II Honors

Credit: 1
Level: V
Grade Offered: 9, 10, 11
Annual: 9, 10 MA8256
Annual: 9, 10 MA8257
Annual: 11 MA8251
Annual: 11 MA8252
Prerequisite: Geometry Honors or department approval with an A in both Geometry Accel and Algebra Accel

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This course presents the topics contained in Algebra II and also includes the topics of polynomial functions, logarithmic functions, sequences, series, elementary probability, rational functions, and trigonometry topics. Problem solving with the graphing calculator is a major emphasis in this course.

Geometry Prep

Credit: 1
Level: III
Grade Offered: 10, 11,12

Annual:	10	MA5136
Annual:	10	MA5137
Annual:	11, 12	MA5131
Annual:	11, 12	MA5132

Prerequisite: Algebra any level

In this course, we will learn about and investigate the measurements and properties of lines, planes, angles, polygons, and solids as well as their interrelationships. This class will provide you the opportunity to grow as a critical-thinker and problem-solver all while applying your pre-existing knowledge of algebra to geometric concepts. We will utilize a variety of methods of logical thinking to write the following types of proofs: 2-column, paragraph, flow, and coordinate proofs.

Geometry Accel

Credit: 1
Level: IV
Grade Offered: 9, 10

Annual:	9, 10	MA7146
Annual:	9, 10	MA7147

Prerequisite: Prerequisite: 8th grade teacher recommendation, Algebra Accel, or department approval with an A in Algebra Prep

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In this course, we will learn about and investigate the measurements and properties of lines, planes, angles, polygons, and solids as well as their interrelationships. This class will provide you the opportunity to grow as a critical-thinker and problem-solver all while applying your pre-existing knowledge of algebra to geometric concepts. We will utilize a variety of methods of logical thinking to write the following types of proofs: 2-column, paragraph, flow, and coordinate proofs.

Geometry Honors

Credit: 1
Level: V
Grade Offered: 9, 10

Annual:	9, 10	MA8166
Annual:	9, 10	MA8167

Prerequisite: Prerequisite: 8th grade teacher recommendation or department approval with an A in Algebra Accel

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This course includes all the topics in Geometry (Accel) at a greater depth and faster pace. Students in this course will study coordinate geometry problems, locus problems, and various enrichment topics. Additionally, right triangle trigonometry and conics will be investigated. Material covered in this course will help prepare students for college level calculus courses.

Pre-Calculus Accel

Credit: 1
Level: IV
Grade Offered: 11, 12

Annual:	11, 12	MA7341
Annual:	11, 12	MA7342

Prerequisite: Geometry Accel and Algebra II Accel or department approval with an A in both Geometry Prep and Algebra II Prep

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This course is an extensive study of functions including trigonometric, linear, quadratic, polynomial, rational, logarithmic, matrices, sequences, combinatorics, statistics and other discrete mathematical topics. Further, topics of complex numbers, polar graphs, vectors, parametrics, limits, and continuity are studied.

Pre-Calculus Honors

Credit: 1
Level: V
Grade Offered: 10, 11, 12

Annual:	10	MA8356
Annual:	10	MA8357
Annual:	11, 12	MA8351
Annual:	11, 12	MA8352

Prerequisite: Geometry Honors and Algebra II Honors or department approval with an A in both Geometry Accel and Algebra II Accel

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This course is an extensive study of functions. Calculator graphing technology is incorporated into the class in order to learn mathematics from a multifaceted approach.

Linear Algebra

Credit: 1/2
Level: V
Grade Offered: 11, 12

Fall:	11, 12	MA9951

Prerequisite: Successful completion of AP Calculus AB or BC and a 3 or higher on AP Test

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This course is the study of vectors and vector space. Topics include vectors, vector spaces, matrices, determinants, matrix algebra, linear independence, linear transformations, eigenvalues, eigenvectors, and applications of matrices and transformations. Approximately one third of the course will involve the concept of mathematical proofs as applied to linear algebra. Students may
receive three college credits with Moraine Valley upon successful completion of this dual credit course. (Only with Calc BC credit).

Calculus III

Credit: 1/2
Level: V
Grade Offered: 11, 12
Spring: 11, 12 MA9852
Prerequisite: AP Calculus BC and a 3 or higher on AP Test

This course is a one-semester post calculus course. The course covers topics in multivariable calculus. Included are vectors in two and three-dimensions, solid analytic geometry, differential calculus of several variables (including directional derivatives and gradients), and line and surface integrals. The course also includes linear algebra, a study of vector spaces in n-dimensional
Euclidean space and over the complex numbers, inner product spaces, eigenvalues and eigenvectors, linear transformations, applications of vector spaces, and numerical methods. Students may receive four college credits with Moraine Valley upon successful completion of this dual credit course.

Financial Algebra

Credit: 1
Level: III
Grade Offered: 11, 12
Annual: 11, 12 MA6311
Annual: 11, 12 MA6312
Prerequisite: Algebra I and Geometry (Prep)

Financial Algebra is a study of algebra and functions in a financial context. This course combines algebraic and graphical approaches with practical business and personal finance applications. This course encourages students to be actively involved in applying mathematical ideas to their everyday lives. ***Financial Algebra is not approved as a core course for NCAA eligibility.***



Data, Probability and Statistics

Credit: 1
Level: III
Grade Offered: 11, 12
Annual: 11, 12 MA6341
Annual: 11, 12 MA6342
Prerequisite: Algebra I and Geometry (Prep)

This course applies probability and data analysis to real-world situations and random processes, while integrating artificial intelligence (AI) tools to enhance exploration and interpretation of data. Students learn to use graphical displays, data modeling, and probability, including conditional, discrete, and normal probability to analyze information, make predictions, and draw meaningful conclusions. Topics include expected value, binomial and geometric probability, and counting principles. Through hands-on projects, students use simulation, statistical reasoning, and AI applications to support decision-making, understand patterns, evaluate bias, and develop responsible approaches to using emerging technology in statistics and problem solving.

Algebra III Prep

Credit: 1
Level: III
Grade Offered: 12 only
Annual: 12 only MA6321
Annual: 12 only MA6322
Prerequisite: Recommended for seniors who have met their math graduation requirement and have a math PSAT score less than 510 or math preACT score less than 19

Algebra III is designed to develop mathematical reasoning and maturity, to facilitate placement in college level mathematics, and to transition high school students to typical college grading policies. This year-long course is designed for high school seniors who have satisfied their high school math graduation requirement. **Students must take both semesters. Students who earn a C or better in this course can apply to be placed in credit-bearing math at the College of DuPage.**

AP Statistics

Credit: 1
Level: V
Grade Offered: 11, 12
Annual: 11, 12 MA9451
Annual: 11, 12 MA9451
Prerequisite: Algebra II Accel/Honors or department approval with an A in Algebra II Prep

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This course is an introductory course in college level statistics. Most college majors and most careers including education, health care, business, engineering, and the social sciences all require knowledge of statistics. Successful completion of this course prepares students for the AP Statistics exam. Course topics include: descriptive statistics, linear regression, design of experiments, an in depth study of probability, and 10 weeks of inferential statistics, including hypothesis tests and confidence intervals. Strong writing skills are as important as strong algebra skills to succeed.

AP Calculus AB

Credit: 1
Level: V
Grade Offered: 11, 12
Annual: 11, 12 MA9551
Annual: 11, 12 MA9551
Prerequisite: Precalculus (Honors or Accel)

AP Calculus AB is primarily concerned with developing the student's understanding of the concepts of calculus: Functions, graphs and limits, derivatives, and integrals. The course emphasizes a multi-representational approach to calculus with concepts, results, and problems being expressed geometrically, numerically, and verbally. Technology is used regularly by students and teachers to reinforce different representations of functions, to confirm written work, to implement experimentation, and to assist in interpreting results. AP Calculus AB is the equivalent of a semester of college calculus. Students who take this course should plan to take the AP Calculus AB Exam.

AP Calculus BC

Credit: 1
Level: V
Grade Offered: 11, 12
Annual: 11, 12 MA9651
Annual: 11, 12 MA9651
Prerequisite: Precalculus Honors

AP Calculus BC is primarily concerned with developing the student's understanding of the concepts of calculus: Functions, graphs and limits, derivatives, integrals, slope fields, and infinite series with its methods and applications. The course emphasizes a multi-representational approach to calculus with concepts, results, and problems being expressed geometrically, numerically, and verbally. Technology is used regularly by students and teachers to reinforce different representations of functions, to confirm written work, to implement experimentation, and to assist in interpreting results. AP Calculus BC is the equivalent of two semesters of college calculus. Students who take this course should plan to take the AP Calculus BC Exam.



Mathematics Classes

When choosing Annual Courses, you will need the first and second semester codes.

Freshman Annual Courses

Annual

MA4136/7 Algebra Prep
MA4146/7 Algebra Accel
MA7146/7 Geometry Accel
MA8166/7 Geometry Honors

Sophomore Courses

Annual

MA4136/7 Algebra Prep
MA4146/7 Algebra Accel
MA7246/7 Algebra II Accel
MA8256/7 Algebra II Honors
MA5136/7 Geometry Prep
MA7146/7 Geometry Accel
MA8166/7 Geometry Honors
MA7341/2 Pre-Calc Accel
MA8356/7 Pre-Calculus Honors

Junior and Senior Courses

Annual

MA4136/7 Algebra Prep
MA5131/2 Geometry Prep
MA6231/2 Algebra II w/Trig Prep
MA7241/2 Algebra II w/Trig Accel
MA8251/2 Algebra II w/Trig Honors
MA9551/2 AP Calculus AB
MA73141 Pre-Calculus Accel
MA9651/2 AP Calculus BC
MA8351/2 Pre-Calculus Honors
MA9451/2 AP Statistics
MA6321/2 Algebra III (Senior only)
MA6311/2 Financial Algebra
MA6341/2 Data, Probability & Stats

Fall only

MA9951 Linear Algebra

Spring only

MA9852 Calculus III

Honor our tradition of excellence, foster innovation, and empower all students in their quest for a fulfilling life.



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