

# Mathematics Graduation Requirement

Students must be enrolled in a mathematics course each school year, and students pursuing a regular diploma must earn credits in Algebra I, Geometry, Algebra II, and a fourth higher-level math course.\*

The following courses may also count as a 4th math credit:

- Honors Physics I may count as the fourth math credit as long as the student has earned Algebra I, Geometry, and Algebra II credits.
- Advanced Placement Calculus, Advanced Placement Statistics, Advanced Placement Computer Science, and Advanced Placement Physics may count as the fourth math credit.
- Statewide Dual Credit Pre-Calculus or Statewide Dual Credit Statistics may count as the fourth math credit.
- Dual Enrollment Math courses may count for the fourth math course.
- \*CTE Course Substitutions for a fourth-level math course
  - Principles of Agribusiness
  - Agriculture & Biosystems Engineering
- \*Students with qualifying disabilities as documented in the IEP are required to complete Algebra I and Geometry to earn a regular high school diploma. Students must be enrolled in a math class for each year of high school for four consecutive years.
- \*Many postsecondary institutions require the completion of Algebra II for admissions. Please check with the postsecondary institutions in which you would like to enroll to ensure you meet all the necessary math requirements for admission.
- \*\*Students who score below a 19 on the Mathematics ACT subtest will be placed in Bridge Math or SAILS
- **Algebra IA and Algebra I B (G02H03/ G02H04)**  
**This two-year, two-course sequence is designed for students with exceptionalities in mathematics as documented in the student's IEP.** These courses will explore and apply concepts, processes, and skills that are essential to completing the high school graduation requirement of Algebra I. Students in the first year will learn to integrate prealgebra and introductory algebra skills. In the second year, students will spend more time developing intermediate algebraic thinking and problem-solving skills to apply to real-world situations.
  - Grade Level: 9, 10, 11, 12
  - Prerequisite: Mathematics Exceptionality
  - Credit: 1 credit for each course
  - credit for each course
- **Algebra 1 Extended Part 1 and Part 2 (G02H01/G02H02)**  
This course includes properties of the real number system, linear and quadratic systems, inequalities, operations on real numbers and polynomials, exponents and radicals. Students learn the language of algebra and practice the application of algebraic concepts to real world problems. The Mathematical Practice Standards apply throughout this course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.
  - Grade Level: 9, 10, 11, 12
  - Prerequisite: None
  - Credit: 1 credit for each course

- **Honors Algebra I (G02H00H)**

This course is for students who did exceptionally well in middle school mathematics. Course content covers the topics of Algebra I in greater depth and at a faster pace, providing time for enrichment through the study of additional performance objectives. As part of the requirement for this honor's level course, students must complete rigorous assignments which may include complex problem-solving, research that involves reading/writing assignments, investigations and explorations, advanced use of technology and making connections within the discipline and to the workplace.

- Grade Level: 9, 10, 11, 12
- Prerequisite: None
- Credit: 1

- **Geometry (G02H11)**

This course is a survey of the fundamental and advanced concepts of plane geometry and the related topics in three-dimensional, coordinate and transformational geometry. The fundamental purpose of the course in Geometry is to formalize and extend students' geometric experiences from the middle grades. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. The Mathematical Practice Standards apply throughout this course and, together with the content standards, allow students to experience mathematics as a coherent, useful, and logical subject that capitalizes on their ability to make sense of problem situations.

- Grade Level: 9, 10, 11, 12
- Prerequisite: Algebra I
- Credit: 1

- **Honors Geometry (G02H11H)**

This course covers all topics of Geometry at a significantly faster pace, in greater depth, and with supplemental topics. Strong analytical thinking skills beyond the rigors of algebraic computation are essential for this course, which strongly emphasizes the concept of proof. As part of the requirement for this honor's level course, students must complete rigorous assignments which may include complex problem-solving, research that involves reading/writing assignments, investigations and explorations, advanced use of technology and making connections within the discipline and to the workplace.

- Grade Level: 9, 10, 11, 12
- Prerequisite: Algebra I
- Credit: 1

- **Algebra II (G02H05)**

Algebra II emphasizes polynomial, rational and exponential expressions, equations, and functions with a greater focus on application problems. This course focuses on gaining a deeper understanding of the topics presented in the curriculum. This course also introduces students to the complex number system, basic trigonometric functions, and foundational statistics skills such as interpretation of data and making statistical inferences. Students build upon previous knowledge of equations and inequalities to

reason, solve, and represent equations and inequalities numerically and graphically.

- Grade Level: 9, 10, 11, 12
- Prerequisite: Algebra I
- Credit: 1

- **Honors Algebra II (G02H05H)**

Algebra II Honors emphasizes polynomial, rational and exponential expressions, equations, and functions with a greater focus on application problems. This course focuses on gaining a deeper understanding of the topics presented in the curriculum. This course also introduces students to the complex number system, basic trigonometric functions, and foundational statistics skills such as interpretation of data and making statistical inferences. Students build upon previous knowledge of equations and inequalities to reason, solve, and represent equations and inequalities numerically and graphically.

- Grade Level: 9, 10, 11, 12
- Prerequisite: Algebra I
- Credit: 1

- **Mathematics Intervention (G02H22)**

This course is designed to support students' learning of the mathematical skills necessary to be successful in high school mathematics courses. Students may be required to participate in this course based on student mathematics data.

- Grade Level: 9, 10, 11, 12
- Prerequisite: Algebra I
- Credit: 1
- Maximum Credit: 4

- **Bridge Math (G02H41)**

This course is designed to introduce concepts previously studied in a new approach. Connections will be made between concepts allowing for a more in-depth understanding of topics and for problem solving applications. Students will look at multiple representations of concepts, blend their new understanding of topics with applications, and have the opportunity to model contextual situations. Concepts to study will include linear and quadratic functions, similar triangles and proportions, angle properties, scientific notations, polynomial arithmetic, radical expressions and probability. **This course is required for students who score below 19 on the Math portion of the ACT.**

- Grade Level: 12
- Prerequisite: Algebra I, Geometry, Algebra II
- Credit: 1

- **SAILS Math (G02H41S)**

The Seamless Alignment and Integrated Learning Support (**SAILS**) program targets students that have not achieved college readiness benchmarks by introducing the college developmental curriculum into the high school senior year. Developed by K-12 teachers and higher education faculty at Chattanooga State Community College, SAILS embeds the

Tennessee Board of Regents (TBR) Learning Support competencies into the high school senior year math course utilizing a blended learning model.

- Grade Level: 12
- Prerequisite: Algebra I, Geometry, Algebra II
- Credit: 1
- **Applied Mathematical Concepts (G02H42)**
  - Grade Level: 11, 12
  - Prerequisite: Algebra I, Geometry, Algebra II
  - Credit: 1
- **Honors Pre-Calculus (G02H23H)**

Topics covered in this course are as follows: Equations, Inequalities, Properties of Functions, Models, Functions, Trigonometric Functions, Triangles, and Circles. Students will have an opportunity to complete an exam at the end of the course to receive college credit as well as have a strong background for a first year Calculus sequence. As part of the requirement for this honor's level course, students must complete rigorous assignments which may include complex problem-solving, research that involves reading/writing assignments, investigations and explorations, advanced use of technology and making connections within the discipline and to the workplace.

  - Grade Level: 10, 11, 12
  - Prerequisite: Algebra I, Geometry, Algebra II
  - Credit: 1
  
- **Statewide Dual Credit Pre-Calculus (G02H74)**

Topics covered in this course are as follows: Equations, Inequalities, Properties of Functions, Models, Functions, Trigonometric Functions, Triangles, and Circles. Students will have an opportunity to complete an exam at the end of the course to receive college credit as well as have a strong background for a first year Calculus sequence. As part of the requirement for this honor's level course, students must complete rigorous assignments which may include complex problem-solving, research that involves reading/writing assignments, investigations and explorations, advanced use of technology and making connections within the discipline and to the workplace.

  - Grade Level: 11, 12
  - Prerequisite: Algebra I, Geometry, Algebra II
  - Credit: 1

\*This course qualifies as an EPSO if students complete the course and attempt the exam.
- **AP Calculus AB (G02H24) (Through AP Access for all only)**

This course is

  - Grade Level: 11, 12
  - Prerequisite: Algebra I, Geometry, Algebra II, Pre-Calculus
  - Credit: 1

- \*This course qualifies as an EPSO if students complete the course and attempt the exam.

**AP Calculus BC (G02H25) (Through AP Access for all only)**

This course reviews

- Grade Level: 11, 12
- Prerequisite: Algebra I, Geometry, Algebra II, Pre-Calculus
- Credit: 1

- \*This course qualifies as an EPSO if students complete the course and attempt the exam.

- **Statistics (G02H37)**

Elementary Statistics is an introduction to data analysis course that makes use of graphical and numerical techniques to study patterns and departures from patterns. The student studies randomness with emphasis on understanding variation, collects information in the face of uncertainty, checks distributional assumptions, tests hypotheses, uses probability as a tool for anticipating what the distribution of data may look like under a set of assumptions, and uses appropriate statistical models to draw conclusions from data.

- Grade Level: 11, 12
- Prerequisite: Algebra I, Geometry, Algebra II
- Credit: 1

- **Statewide Dual Credit Introduction to Probability and Statistics (G02H75)**

Elementary Statistics is an introduction to data analysis course that makes use of graphical and numerical techniques to study patterns and departures from patterns. The student studies randomness with emphasis on understanding variation, collects information in the face of uncertainty, checks distributional assumptions, tests hypotheses, uses probability as a tool for anticipating what the distribution of data may look like under a set of assumptions, and uses appropriate statistical models to draw conclusions from data.

- Grade Level: 10, 11, 12
- Prerequisite: Algebra I, Geometry, Algebra II
- Credit: 1

\*This course qualifies as an EPSO if students complete the course and attempt the exam.

- **AP Statistics (G02H26) (through AP access for all)**

This course introduces students to

- Grade Level: 11, 12
- Prerequisite: Algebra I, Geometry, Algebra II
- Credit: 1

\*This course qualifies as an EPSO if students complete the course and attempt the exam.

- **Preparing for ACT, Postsecondary, & Career (G25H00)**

This course provides students with skills and competencies needed to be successful on the ACT. Students will become familiar with the format and the scoring of the ACT, learn test taking skills, and receive individualized instruction to improve scores.

- Grade Level: 11, 12
- Prerequisite: None
- Credit: 1

- **Other Courses for 4th Math Credit**

**Honors Physics I (G03H20H)**

Physics Honors is a course that studies the interaction between matter and energy. Topics include mechanics, thermodynamics, waves and sound, light and optics, electricity and

magnetism, and atomic and nuclear physics. Physics is a math-based course that involves the application of mathematical principles and problem solving, graph interpretation, laboratories, and lab reporting. Strong math and analytical thinking skills are important. There is much more emphasis on mathematics than standard physics. Students must successfully meet district and teacher expectations in the completion of honors criteria each quarter. This course may count as a 4th math credit.

- Grade Level: 10, 11, 12
  - Prerequisite: Biology, Algebra I, Geometry, Algebra II concurrently
  - Credit: 1
- **AP Computer Science A (G02H44) (through AP access for all)**  
Computer science embraces problem solving, hardware, algorithms, and perspectives that help people utilize computers to address real-world problems in contemporary life. As the study of computer science is evolving, the careful design of the AP Computer Science Principles course and exam continues to strive to engage a diverse student population, including female and underrepresented students, with the rigorous and rewarding concepts of computer science. Students who take the AP Computer Science Principles course and exam are well prepared to continue their study of computer science and its integration into a wide array of computing and STEM-related fields. This course may count as a 4th math credit.
    - Grade Level: 11, 12
    - Prerequisite: NA
    - Credit: 1

\*This course qualifies as an EPSO if students complete the course and attempt the exam.

- **Agricultural Fabrication and Biosystems Engineering (C18H22)**  
This CTE course includes basic technologies of metal fabrication and agricultural structures. Also includes hot/cold metal work, and material computation, electric wiring and codes, blueprint reading and drawing and selection of appropriate materials for projects. This course may count as a 4th math credit.
  - Grade Level: 11, 12
  - Prerequisite: Principles of Agricultural Mechanics
  - Credit: 1

### **Graduate On Time (G25H10)**

Credit recovery is a course-specific, standards based extended learning opportunity for students who have previously been unsuccessful in mastering the standards required to receive course credit. Credit recovery programs, in general, have a primary focus of helping students stay in school and graduate on time. Students must have parents complete and sign the Credit Recovery Application before participating in credit recovery.

- Grade Level: 9, 10, 11, 12
- Prerequisite: NA
- Minimum Credit: 0
- Maximum Credit: --