

## Math - Course Descriptions

### Algebra

3538 Grade 9

1 credit

★ *Passing the NYS Regents Algebra Common Core exam is required for graduation*

⊗ Required: TI-83+, TI-84, or TI-84+ Graphing Calculator

Algebra is the first mathematics course in the high school. Algebra provides tools and ways of thinking that are necessary for solving problems in a wide variety of disciplines. This course will assist students in developing skills and processes to be applied using a variety of techniques, including technology, to successfully solve problems in a variety of settings including: linear equations in one variable, quadratic functions with integral coefficients and roots as well as absolute value and exponential functions. Students will take the NYS Regents Algebra Common Core exam in June. Passing this exam is required for graduation.

### Double Block Algebra

Grade 9

1 credit

★ *Passing the NYS Regents Algebra Common Core exam is required for graduation*

⊗ NOTE: Teacher's work directly with counselors to determine placement

⊗ Required: TI-83+, TI-84 or TI-84+ Graphing Calculator

Double Block Algebra is an Algebra course in which students have math two consecutive periods every day. Algebra is the first math course that students take in high school, and students must take the NYS Algebra Common Core Exam in June as it is a requirement for graduation. This course will assist students in developing skills and techniques, including technology, to successfully solve problems in a variety of settings. Major topics include linear functions, quadratic functions and exponential functions. In Double Block, students will have extra time to participate in team building activities, work on white boards, complete math games and projects, and participate in other hands-on activities to enhance understanding.

### Honors Geometry

3433 Grade 9

1 credit

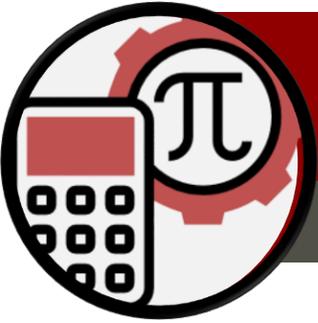
★ Recommendation: Successful completion of accelerated Algebra with a final average of 83%+ and NYS Regents Algebra Common Core final exam score of 80%+

★ *Passing the NYS Regents Geometry Common Core exam is the second of three required for an Advanced Regents Diploma*

⊗ Required: TI-83+ Graphing Calculator

Geometry is the second course in mathematics for high school students. Within this course, students will have the opportunity to make conjectures about geometric situations and prove in a variety of ways, both formal and informal, that their conclusion follows logically from their hypothesis. Students will use the traditional tools of compass and straightedge. Geometry is meant to lead students to an understanding that reasoning and proof are fundamental aspects of mathematics and something that sets it apart from the other sciences. Students will take the NYS Regents Geometry Common Core exam in June. This exam is the second of three math exams required for an Advanced Regents diploma.





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## Geometry Regents

*3422 Grade 10*

*1 credit*

- ★ *Passing the NYS Regents Geometry Common Core exam is the second of three required for an Advanced Regents Diploma*
- ⊗ Required: TI-83+ Graphing Calculator

Geometry is the second course in mathematics for high school students. Within this course, students will have the opportunity to make conjectures about geometric situations and prove in a variety of ways, both formal and informal, that their conclusion follows logically from their hypothesis. Students will use the traditional tools of compass and straightedge. Geometry is meant to lead students to an understanding that reasoning and proof are fundamental aspects of mathematics and something that sets it apart from the other sciences. Students will take the NYS Regents Geometry Common Core exam in June. This exam is the second of three math exams required for an Advanced Regents diploma.

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## Geometry Regents Lab

*Grade 10*

*1 credit*

- ★ *Passing the NYS Regents Geometry Common Core exam is the second of three required for an Advanced Regents Diploma*
- ⊗ NOTE: Teacher's work directly with counselors to determine placement
- ⊗ Required: TI-83+ Graphing Calculator

Geometry is the second course in mathematics for high school students. Students will have a lab period for reinforcement every other day. Within this course, students will have the opportunity to make conjectures about geometric situations and prove in a variety of ways, both formal and informal, that their conclusion follows logically from their hypothesis. Students will use the traditional tools of compass and straightedge. Geometry is meant to lead students to an understanding that reasoning and proof are fundamental aspects of mathematics and something that sets it apart from the other sciences. Students will take the NYS Regents Geometry Common Core exam in June. This exam is the second of three math exams required for an Advanced Regents diploma.

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## Honors Algebra II Regents

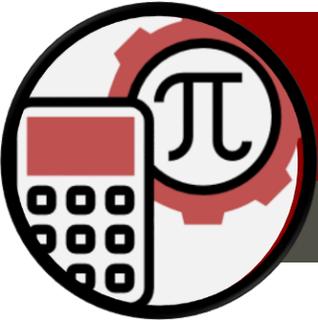
*3521 Grades 10,11*

*1 credit*

- ★ Recommendation: Successful completion of Honors Geometry & NYS Regents Algebra Common Core final exam score of 80%+
- ★ *Passing the NYS Regents Algebra II Common Core exam is the capstone of three required for an Advanced Regents Diploma*
- ⊗ Required: TI-83+, TI-84, or TI-84+ (preferred) Graphing Calculator

Algebra II an upper-level course and a continuation and extension of the two courses that precede it. While developing the algebraic techniques that will be required of students who continue their study of mathematics, this course is also intended to continue developing alternative solution strategies and algorithms. Technology will provide students the means to address a problem situation to which they might not otherwise have access. Students will take the NYS Regents Algebra II Common Core exam in June.





## Algebra II Regents

**3522 Grades 10, 11**

**1 credit**

- ★ *Passing the NYS Regents Algebra II Common Core exam is the capstone of three required for an Advanced Regents Diploma*
- ⊗ Required: TI-83+, TI-84, or TI-84+ (preferred) Graphing Calculator

Algebra II an upper-level math course and is a continuation and extension of Algebra I and Geometry. While developing the algebraic techniques that will be required of students who continue their study of mathematics, this course is also intended to continue developing alternative solution strategies and algorithms. Technology will provide students the means to address a problem situation to which they might not otherwise have access. Students will take the NYS Regents Algebra II Common Core exam in June.

## Honors Pre-Calculus

**3014 Grade 11**

**1 credit**

- ★ Recommendation: A final average of 85%+ in Honors Algebra II and NYS Regents Algebra II Common Core exam.
- ★ *This course should be considered only by highly motivated students*
- ⊗ Required: TI-83+, TI-84 or TI-84+ Graphing Calculator

The objective of this course is to keep the students who are planning to take AP Calculus in their senior year together for two years so the needless repetition of topics can be eliminated and the students can gain an appreciation for rigorous mathematical investigation. Chapter 1 of AP Calculus will be covered. This course should be considered only by highly motivated students. Students will take a teacher made assessment in June.



## Pre-Calculus

**3013 Grades 11, 12**

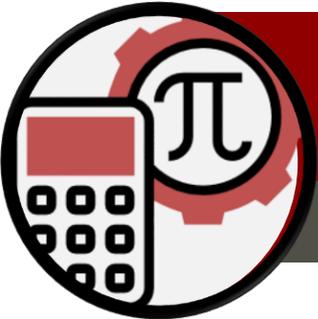
**1 credit**

- ★ Recommendation: A final average of 75%+ in Algebra II and 65%+ on NYS Algebra II Common Core exam.
- ⊗ Required: TI-83+, TI-84, or TI-84+ Graphing Calculator

This course is designed to provide a sound foundation for seniors who are planning to enter a four-year college after graduation. Students in this class will deepen their algebraic skills as this course will emphasize mathematical thinking, the use of mathematical models and the understanding of mathematical functions and graphs. Beginning concepts of Calculus will be introduced. Students will have the opportunity to take this course for 4 SUNY college credits. Students will take a teacher made assessment in June.



SUNY: Erie – 4 credits available for this course.



## AP Calculus (AB)

*3412 Grade 12*

*1 credit*

- ★ Recommendation: A final average of 85%+ in Pre-Calculus Honors or with permission of both instructors
- ★ *This course should be considered only by highly motivated and mature students*
- ⊗ Required: TI-89 Graphing Calculator

This course consists of a full high school academic year of work that is comparable to 1.5 semesters of calculus in colleges and universities. It is expected that students who take AP Calculus will seek college credit, college placement, or both from post-secondary institutions of higher learning. Topics covered in this course include functions, graphs, limits, differential calculus and integral calculus. Applications of each topic are explored and the use of the TI-89 graphing calculator is mandatory. In addition to the AP Exam in May, there will be a final assessment given by the instructor. This is a college level course and should be considered only by highly motivated and mature students.



## Calculus

*3411 Grade 12*

*1 credit*

- ⊗ Required: Successful completion of Pre-Calculus

This course is designed for students who successfully completed Pre-Calculus and are going to a four year college but are not planning on taking AP Calculus. The course consists of a full high school academic year of work that is comparable to one semester of calculus in colleges and universities. Topics covered in this course include functions, graphs, limits, differential calculus and integral calculus. This is a college level course and a great foundation for success in college calculus. Students will take a teacher made assessment in June.

## AP Statistics

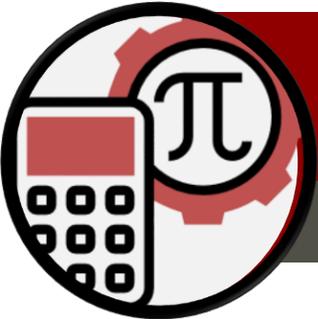
*3513 Grades 11, 12*

*1 credit*

- ★ Recommendation: A final average of 85%+ in Algebra II Regents
- ★ *This course should be considered only by highly motivated and mature students*
- ⊗ Required: TI-83+ Graphing Calculator

This is a full high school academic year course that is comparable to 1-2 semesters of introductory college statistics. Students who take AP Statistics seek to receive college credit, college placement, or both, from post secondary institutions. This course covers such topics as exploratory statistical analysis, proper methods for data collection, probability of anticipating outcomes from given models, and applying statistical inference guides when researching data. In addition to the AP Exam in May, there will be a final assessment given by the instructor in June. This is a college level course and should only be considered by highly motivated, mature students who possess above average math and writing skills.





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## AP Computer Science

*3513 Grades 11, 12*

*1 credit*

★ Suggested Preparation: Successful completion of AP Computer Science Principles (Technology Department)

AP Computer Science A is designed to be an introductory college-level course in computer science. It emphasizes object-oriented programming methodology with an emphasis on problem solving and algorithm development. The coursework will include the following topics: object-oriented program design, program implementation, program analysis, the study of standard data structures and abstraction, standard algorithms, and computing in context. Current offerings of the AP Computer Science A Exam require the use of Java (those sections of the exam that require the reading or writing of actual programs), and therefore the AP Computer Science A course focuses on Java for coding. The course is based on numerous problem solving exercises, labs, and case studies, which require students to design and implement Java classes. The course requires 40-50 hours of hands-on work in a computer lab.



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## College-Entrance Math Prep

*1420 Grades 10, 11, 12*

*1 credit*

★ Recommendation: Successful completion of a Geometry-level course

⊗ Required: Graphing Calculator

Are you planning on attending college? Do you want to improve your SAT/ACT math scores to gain entrance into the college of your choice or increase your qualifications for scholarships? This course is for you!! You will have practice taking entire SAT, ACT, PSAT and college placement exams. This course also covers math topics needed for the Civil Service exam and most first-level college math courses. During the course, we will explore different college majors and their requirements. We will work on study skills & techniques, test-taking strategies, and time management. This course includes group projects and computer labs.

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## Life Math

*3424 Grades 11, 12*

*1 credit*

★ Recommendation: Successful completion of a Geometry-level course

This class shows how math topics apply to real-life situations. In this class, the topics covered include percentages, measurements, metric, fractions, unit conversions, checking accounts, bank fees, loans, taxes, work forms, problem solving, consumer purchases, credit, probability, odds, commissions, work related math skills, and much more. We will also work on listening, teamwork, and communication skills. Everything learned in this class will be put to good use immediately. This math class is truly for life.