
MATHEMATICS

Dr. Clifford Swezey, Director (516) 560-8915

PRE-Algebra

Course No. 1353

Grades Offered: 9, 10

Credit: 1.0

Examination: School Exam

Prerequisite: None

Pre-Algebra is designed for students who struggled in grade 8 mathematics and need time to improve their skills before taking Regents-level Algebra. The course will emphasize fundamental mathematics skills, focusing on the four operations using fractions, decimals, and algebraic expressions. It will help to build skills and confidence in important algebraic ideas such as solving equations, looking at patterns and functions, coordinate geometry, and measurement. ***It is recommended that students provide their own TI-84 graphing calculator.***

PRE-Algebra EL

Course No. 1352

Grades Offered: 9, 10

Credit: 1.0

Examination: School Exam

Prerequisite: None

Pre-Algebra EL is designed for students who may be new to the country and who need instruction to prepare for Algebra, or, for students who did not succeed in grade 8 mathematics. The teacher is trained in helping English-Language Learners understand mathematics as they are building their understanding of English at the same time. The course will emphasize basic mathematics skills, focusing on the four operations (addition, subtraction, multiplication, and division) using fractions, decimals, and algebraic expressions. ***It is recommended that students provide their own TI-84 graphing calculator.***

BILINGUAL PRE-ALGEBRA

Course No. 1354

Grade Offered: 9, 10

Credit: 1.0

Examination: School Exam

Prerequisite: None

This course is designed for English-Language Learners students who need to prepare for Regents-level Algebra and who will benefit from additional support in fundamental mathematics first. With support in Spanish, students will become familiar with the properties of mathematics; the language of algebra; solving one step and two step equations; adding, subtracting, multiplying and dividing rational numbers and integers; solving inequalities; graphing equations and inequalities; proportion; percent; statistics and graphs; probability; applying algebra to geometry; measurement; introduction to trigonometry; and the study of polynomials. ***It is recommended that students provide their own TI-84 graphing calculator.***

ALGEBRA 1Course No. **1523**

Grade Offered: 9

Credit: 1.0

Examination: Regents Exam

Recommended Prerequisite: Math 8

This course follows the New York State Integrated Algebra curriculum and is the first course of a three year sequence that is required for the Regents Diploma with Advanced Designation. Topics include number theory, operations, variables and expressions, equations, inequalities, patterns and functions, coordinate geometry, Trigonometric functions, measurement. Students will sit for the NYS Integrated Algebra Regents Examination at the end of this course. ***It is recommended that students provide their own TI-84 graphing calculator.***

ALGEBRA 1 ELCourse No. **1356**

Grade Offered: 9

Credit: 1.0

Examination: Regents Exam

Recommended Prerequisite: Math 8

This course follows the same New York State Integrated Algebra curriculum as 1523 and is the first course of a three year sequence that is required for the Regents Diploma with Advanced Designation. Students will receive support through SIOP instruction which is a method for reaching students who are developing their English proficiency. Students will sit for the NYS Integrated Algebra Regents Examination at the end of this course. ***It is recommended that students provide their own TI-84 graphing calculator.***

ALGEBRA IECourse No. **1561**

Grade Offered: 9

Credit: 1.0

Examination: Algebra I Regents Exam

Prerequisite: Grade 8 teacher recommendation

This course is designed to provide intensive extra support to students who have been identified for strategic intervention. It includes an additional period of instruction on alternate days to support learning in the core algebra class through the development of conceptual algebraic understanding and critical Algebraic skills. The primary goal of this course is to help maximize student success in passing the Algebra I Regents exam, which is a Regents diploma graduation requirement. ***It is recommended that students provide their own TI-84 graphing calculator.***

BILINGUAL ALGEBRA ICourse No. **1482A**

Grade Offered: 9, 10

Credit: 1.0

Examination: Regents Exam

Prerequisite: eighth Grade Level Math

This course is designed for English Language Learners who will benefit from bilingual instruction to support learning. The course will begin primarily in Spanish but will slowly build toward more reliance on English throughout the year. This course follows the New York State Algebra I curriculum and is the first course

of a three year sequence that is required for the Regents Diploma with Advanced Designation. Topics include number theory, operations, variables and expressions, equations, inequalities, patterns and functions, coordinate geometry, Trigonometric functions, measurement. ***It is recommended that students provide their own TI-84 graphing calculator.***

INTERMEDIATE ALGEBRA

Course No. **1360**

Grade Offered: 10

Credit: 1.0

Examination: Algebra I Regents

Prerequisite: Common Core Algebra I

In addition to preparing students to retake the Regents exam in Algebra I, this course will go further to prepare students for the study of college-level mathematics and the technical fields of science. The content of the course focuses on the integration of Algebra I and second year algebra with an introduction to circular and Trigonometric functions, number theory, operations, variables and expressions, equations, inequalities, patterns and functions, coordinate geometry, Trigonometric functions, measurement. Students will also take a final exam in June. ***It is recommended that students provide their own TI-84 graphing calculator.***

COLLEGE-PREP ALGEBRA

Course No. **1471**

Grade Offered: 11.12

Credit: 1.0

Examination: Class Final

Prerequisite: Two credits of High School Mathematics

This course is designed to prepare students to be successful on the college-level entrance exam (Accuplacer) and avoid the need for remedial mathematics classes in college. Topics include Integers and rational numbers, fundamental operations with integers, fractions and decimals, ratio and proportion, percent, consumer and job related problems; fundamental processes of arithmetic and algebra, factoring, linear and fractional equations, exponents, radicals, quadratic equations and right triangle trigonometry, systems of real numbers and equations, inequalities, functions and their graphs, rational expressions and the study of both irrational and complex numbers. ***It is recommended that students provide their own TI-84 graphing calculator.***

COLLEGE ALGEBRA

Course No. **1350**

Grade Offered: 11, 12

Credit: 1.0

Examination: School Exam

Prerequisite: Three High School Math Credits

This course will give students experience with rigorous college-level mathematics focusing on algebraic ideas including matrices, determinants, polynomial functions, conic sections, exponential and logarithmic functions, sequences, and series, trigonometry functions and graphs, along with probability and statistics. ***It is recommended that students provide their own TI-84 graphing calculator.***

GEOMETRY EXPLORATIONS

Course No. **1475**

Grade Offered: 10, 11

Credit: 1.0

Examination: Class Final

Prerequisite: Algebra 1 and Teacher Recommendation

This non-Regents course meets every day for students who struggled in Algebra I and might benefit from additional time to prepare for the more rigorous Geometry Regents course. Topics will mirror the Regents class and introduce students to the more difficult topics during the year so that when they take the Regents course, students may have greater familiarity and higher-level comprehension, building their confidence and skills for the Regents. ***It is recommended that students provide their own TI-84 graphing calculator.***

GEOMETRY

Course No. **1472N**

Grade Offered: 10

Credit 1.0

Examination: Common Core Regents Exam

Prerequisite: Algebra 1 and Teacher Recommendation

This course follows the New York State Geometry curriculum and is the second course of a three-year sequence required for the Regents Diploma with Advanced Designation. Topics include Euclidean geometry and proofs, coordinate geometry and proofs, right triangle trigonometry, circles and proofs, surface area and volume, transformations, logic and locus. Students will take the NYS Geometry Regents Examination at the end of this course. ***It is recommended that students provide their own TI-84 graphing calculator.***

BILINGUAL GEOMETRY

Course No. **1359**

Grade Offered: 10

Credit 1.0

Examination: Common Core Regents Exam

Recommended Prerequisite: Common Core Algebra I

This course is designed to support English Language Learners. Please see course description of Geometry. Students will take the NYS Geometry Regents Examination at the end of this course. ***It is recommended that students provide their own TI-84 graphing calculator.***

GEOMETRY 9 HONORS

Course No. **1453**

Grade Offered: 9

Credit: 1.0

Examination: Common Core Regents Exam

Prerequisite: Grade 8 Algebra I Accelerated plus Teacher Recommendation

This is a weighted Honors course designed for those students who have performed at a mastery level in the accelerated middle school Algebra Regents program. The course includes enrichment topics that enhance the New York State Geometry curriculum and also serves as the second course of a three year sequence required for the Regents Diploma with Advanced Designation. Topics also include applications of plane geometry that involve linear and quadratic relationships as well as problem solving, measurement, methods of reasoning and formal proof. Students will take the NYS Geometry Regents

Examination at the end of this course. ***It is recommended that students provide their own TI-84 graphing calculator.***

ALGEBRA 2

Course No. **1470**

Grade Offered: 11, 12

Credit: 1.0

Examination: Regents Exam

Recommended Prerequisite: Completion of Geometry

This course follows the New York State Algebra 2/Trigonometry curriculum and is the third course of a three year sequence required for the Regents Diploma with Advanced Designation. Topics include complex numbers, relations and functions, coordinate geometry, trigonometric functions, statistics and probability. Students will take the NYS Algebra 2 & Trigonometry Regents Examination at the end of this course. This course includes an extended support period every-other day. ***It is recommended that students provide their own TI-84 graphing calculator.***

ALGEBRA 2 HONORS

Course No. **1469H**

Grade Offered: 10

Credit: 1.0

Examination: Regents Exam

Recommended Prerequisite: Geometry Honors plus Teacher Recommendation

This is a rigorous weighted course that designed for those students who have performed at a mastery level in Geometry Honors. This course includes enrichment topics that enhance the New York State Algebra2/Trigonometry curriculum and also serves as the third course of a three year sequence required for the Regents Diploma with Advanced Designation. Topics include complex numbers, relations and functions, coordinate geometry, trigonometric functions, statistics and probability. ***It is recommended that students provide their own TI-84 graphing calculator.***

INTRODUCTION TO STATISTICS

Course No. **1341**

Grade Offered: 11, 12

Credit: 1.0

Examination: School Exam

Recommended Prerequisite: Algebra 1 plus One Additional Math Credit

This course designed for students who have an interest in pursuing careers in which probability and statistics are an important element of the work, such as business, industry, advertising, finance; the social sciences of psychology and sociology, human resources, teaching and guidance; agriculture, architecture, and sales. The course will prepare students for Advanced Placement (AP) Statistics the following year. This introductory course focuses on collecting and analyzing real world data, calculating results, drawing conclusions and reporting findings in writing. It is designed to help students strengthen their ability to communicate their thinking while providing support for their statements through the tool of mathematics. An understanding and foundation in algebra is highly recommended. ***It is recommended that students provide their own TI-84 graphing calculator.***

AP STATISTICS

Course No. **1345**

Grade Offered: 11, 12

Credit: 1.0

Examination: AP Exam

Recommended Prerequisite: Algebra 2/Trigonometry plus Teacher Recommendation

This is a course in statistics designed for students who are interested in pursuing careers in the social sciences of psychology and sociology, human resources, teaching and guidance; agriculture, architecture, and sales. Topics include exploring and analyzing data, methods of statistical inference, statistical models, binomial and normal distribution, and t-distribution. All students enrolled in this class are expected to take the College Board AP exam. ***It is recommended that students provide their own TI-84 graphing calculator.***

TOPICS IN PRE-CALCULUS 1 HONORS

Course No. **1401**

Grade Offered: 9, 10

Credit: 0.5

Examination: Final Class Exam

Co-requisite: Geometry

This is a weighted Honors course designed for students with high-level interest and performance in mathematics. It is an appropriate course for those who wish to accelerate themselves into AP Calculus by grade 11 by completing the requirements for Pre-Calculus a full-year early when followed by Topics in Pre-Calculus 2 in the following year. It will meet every-other day and is designed to be taken at the same time as Integrated Geometry. Algebra-based pre-calculus topics covered include linear relations and functions, systems of linear equations and inequalities, nature of graphs, polar coordinates and complex numbers. ***It is recommended that students provide their own TI-84 graphing calculator.***

TOPICS IN PRE-CALCULUS 2 HONORS

Course No. **1402**

Grade Offered: 10, 11

Credit: 0.5

Examination: Final Class Exam

Recommended Prerequisite: Topics in Pre-Calculus 1; Co-requisite Algebra 2/Trig

This is the second course in the sequence that meets every-other day, leading to early completion of Pre-Calculus. The course will focus on Trigonometry-based pre-calculus topics, Algebra, Functions and Graphs (Linear and Absolute Functions), Polynomial and Rational Functions, Systems and Matrices, and Analytical Geometry. ***It is recommended that students provide their own TI-84 graphing calculator.***

PRE-CALCULUS

Course No. **1400**

Grade Offered: 11, 12

Credit: 1.0

Examination: Class Final

Recommended Prerequisite: Completion of Algebra 2/Trigonometry

This course is designed to prepare students for the study of college level calculus. Topics include real and complex numbers, higher degree equations and inequalities, sequences and series, functions and their graphs, vectors, matrices, conic sections, exponential and logarithmic functions, polar coordinates, areas

of sectors and segments, trigonometric applications, statistics, and an introduction to limits and derivatives. ***It is recommended that students provide their own TI-84 graphing calculator.***

PRE-CALCULUS Honors

Course No. **1390**

Grade Offered: 11, 12

Credit: 1.0

Examination: Class Final

Recommended Prerequisite: 85 or above in Algebra 2/Trigonometry plus Teacher Recommendation

This is a weighted course designed to prepare students for the study of college-level or AP Calculus. Topics include real and complex numbers, higher degree equations and inequalities, sequences and series, functions and their graphs, vectors, matrices, conic sections, exponential and logarithmic functions, polar coordinates, areas of sectors and segments, trigonometric applications, statistics, and an introduction to limits and derivatives. This is a college-level course that is taught on campus by a Uniondale teacher who has been approved by Molloy College. Students having maintained 85 average or above in Algebra 2/Trigonometry will receive Honors credit with differential weighting. ***It is recommended that students provide their own TI-84 graphing calculator.***

AP CALCULUS AB

Course No. **1300**

Credit: 1.0

Grade Offered: 12

Examination: AP Exam

Recommended Prerequisite: Pre-Calculus plus Teacher Recommendation

This is a college-level course equivalent to the first semester of college calculus. Most colleges grant up to 3 credits for this course with an AP exam score of 3, 4, or 5. Students study topics such as functions, graphs, and limits, derivatives, integrals, and the Fundamental Theorem of Calculus. All students enrolled in this class are expected to take the AP exam in May. ***It is recommended that students provide their own TI-84 graphing calculator.***

AP CALCULUS BC

Course no. **1301**

Grade Offered:

Credit: 1.0

Examination: AP Exam

Recommended Prerequisite: 85 or higher in Pre-Calculus plus Teacher Recommendation

This is a college-level course equivalent to the first two semesters of college calculus. Most colleges grant up to 6 credits for students who score 3, 4, or 5 on the AP exam. Students study all topics covered in AP Calculus AB (functions, graphs, and limits, derivatives, integrals, and the Fundamental Theorem of Calculus) as well as additional topics in differential and integral calculus, such as parametric, polar and vector functions, and series. All students enrolled in this class are expected to take the AP exam in May. ***It is recommended that students provide their own TI-84 graphing calculator.***

SAT Math

Course No. **1535 (Fall); 1535A (Spring)**

Grade Offered: 10, 11, 12

Credits: .25

Examination: School Based Assessment in preparation for the SAT

Recommended Prerequisite: Completion of three math credits

This course covers the concepts and ideas addressed on the new SAT exam. In addition, students will learn test-taking strategies that will help maximize their SAT scores. ***It is recommended that students provide their own TI-84 graphing calculator.***

REGENTS SEMINAR

Course No. **1430R (Geometry); 1431R (Algebra 2/Trig)**

Grade Offered: 10-12

Credit: up to 0.25

Examination: January/June Regents Exam

Prerequisite: Need to retake Geometry or Algebra 2/Trig Regents Exam

This is a review course designed for students who wish to succeed in passing the Geometry or Trigonometry Regents examinations in effort to obtain an a Regents Diploma with Distinction. It meets every-other day and focuses on reviewing for the Regents to prepare students to retake the exam in January and/or June. ***It is recommended that students provide their own TI-84 graphing calculator.***

COMPUTER SCIENCE

Dr. Clifford Swezey, Director (516) 560-8915

INTRODUCTION TO COMPUTER SCIENCE

Course No. **1404**

Grade Offered: 9-12

Credit: 0.5

Examination: School Exam

Prerequisite: None

This course meets every-other day for the school year and is designed to focus on computer programming as a method of problem solving. Students will learn how to write programs to solve a variety of problems using the visual basic programming language. A large emphasis is placed on analysis of problems and the development of effective algorithms and flowcharts. In addition, the course introduces programming concepts such as operators, decision statements, loops, functions, arrays and sub-procedures. Assignments will include simulations, games, and applications. Students are not required to have a background in computer programming.

COMPUTER SCIENCE-JAVA

Course No. **1405**

Grade Offered: 10-12

Credit: 0.5

Examination: School Exam

Recommended Prerequisite: Intro to Computer Science (1404)

This course meets every-other day for the entire year and introduces students to the JAVA programming language. It includes examples that demonstrate the syntax of JAVA computer language in an object-oriented framework, along with standard programming practices, such as defining instance methods, working with built-in data types, creating user-defined data types, and working with reference variables. Students who successfully complete this course will move on to AP Computer Science next year.
