

COMPUTER SCIENCE (11.0201)

*Courses in the Computer Science Department can be applied toward the **Visual, Performing and Applied Arts, World Language, and math or science** related graduation requirements. The complete list can be found in the Registration Brochure.*

COMPUTER PROGRAMMING 1 - #04422

20 WEEKS

GRADES: 9-12

PREREQUISITE: Algebra 1 or currently enrolled in Algebra 1

This course is an introduction to structured programming languages. A problem solving approach is emphasized. Topics include decision making, loops, arrays, graphics, strings, files, sound, functions, subroutines and special topics. The course is taught through a combination of individual programming problems, reports, lectures, videos and projects. Students use **Scratch, Visual BASIC** and one higher level programming language.

COMPUTER PROGRAMMING 2 - #04432

20 WEEKS

GRADES: 9-12

PREREQUISITE: Programming 1 or Instructor Approval

This course is a continuation of object oriented programming. Topics include using variables, controlling program flow, functions, using classes and objects, arrays, files and graphics. Students work individually at the beginning and in groups toward the end of the course. Applications from the following areas are included: business, mathematics, science and game theory and mobile app development. Students use **Python** and **Java** as the programming languages.

ADVANCED PLACEMENT (AP) COMPUTER SCIENCE A - #04434

40 WEEKS

GRADES: 11-12

PREREQUISITE: Computer Programming 1, 2 or Instructor Approval

AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures. Students use the standard Java library from the AP Java subset delineated by College Board. The responsible use of these systems is reinforced throughout the course.

**Students are encouraged, but not required to take the Advanced Placement exam for this course which takes place in May.

ADVANCED PLACEMENT (AP) COMPUTER SCIENCE PRINCIPLES - #04444

40 WEEKS

GRADES: 10-12

PREREQUISITE: None

This course may be counted for a Visual and Performing Applied Arts Credit

AP Computer Science Principles is an introductory computing course. Students cultivate their understanding of computer science through working with data, collaborating to solve problems, and developing computer programs as they explore concepts like creativity, abstraction, data and information, algorithms, programming, the internet, and the global impact of computing. It also allows students the opportunity to investigate the innovations in other fields that computing has made possible and examines the ethical implications of new computing technologies.

**Students are encouraged, but not required to take the Advanced Placement exam for this course in May.