COMPUTER SCIENCE

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 and subroutine and special topics. The course is taught through a combination of individual programming problems, reports, lectures, videos and team projects. Students use Scratch and Visual BASIC.

COMPUTER PROGRAMMING 2 - #04432   20 WEEKS

GRADES: 10-12   PREREQUISITE: Programming 1 or Instructor
Approval

This course is an introduction to object oriented programming. Topics include using variables, controlling program flow, functions, using classes and objects, arrays, files and graphics and Windows programming. 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 Java as the programming language.

ADVANCED PLACEMENT (AP) COMPUTER SCIENCE A - #04434   40 WEEKS
GRADES: 11-12   PREREQUISITE: Computer Programming 1 or
Instructor Approval

Advanced Placement Computer Science is a year-long course in computer science. Students develop computer programs that solve a given problem and are understandable, adaptable, and if needed, reusable. Through designing and implementing computer programs, students develop and analyze algorithms, develop and use fundamental data structures and use logic and formal methods. Students use the standard Java library classes from the AP Java subset delineated in Appendix B of the AP Computer Science Course Description. 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

This is a year-long course that introduces students to the central ideas of computer science. The rigor of this course promotes deep learning of computational content, develops computational thinking skills, and engages students in the creative aspects of the field. Students will use discussions and creativity in a collaborative setting to learn about the vital impact advances in computing have on their community and the world. 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.