

## Computer Programming 1

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: Intermediate Algebra

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the study of programming languages used to program PC's.

The primary units of study include understanding the computer system, history of programming languages, numeric and string variables, if-else statements, while loops, and arrays.

The students will demonstrate learning through written programs, homework assignments, tests and projects.

Course Recommendation: This course is recommended for students who have an interest in understanding how computer programs work and the desire to write simple programs.

Board Approved Primary Resource: None

Additional Registration Information: The specific computer language used may vary. This course does not meet the requirements for NCAA approved core courses. See your Dean for more information.



## Computer Programming 2

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: Computer Programming 1

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the study of advanced topics of computer programming.

The primary units of study include editing, compiling, and executing classes and methods; graphics and Graphical User Interface's working with numeric and string variables, if-else statements, while loops, and arrays.

The students will demonstrate learning through written programs, homework assignments, tests and projects.

Course Recommendation: This course is recommended for students who have an interest in understanding how computer programs work and the desire to create programs.

Board Approved Primary Resource: None

Additional Registration Information: The specific computer language used may vary. This course does not meet the requirements for NCAA approved core courses. See your Dean for more information.



## **Advanced Placement Computer Science A**

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: Intermediate Algebra and Geometry

Year-long course

This course fulfills the elective requirement for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: This course is the study of object-oriented programming methodology with an emphasis on problem solving and algorithm development. It also includes the study of data structures and abstraction. This course will be taught using the JAVA language.

The primary units of study include computer systems, variables, expressions, input/output, conditionals, loops, object-oriented programming, arrays, parameters, simple recursion, searching, sorting, and strings.

The students will demonstrate learning through written programs, handwritten assignments, tests and projects.

Course Recommendation: This course is recommended as course for future computer science majors and people who will major in other disciplines that require significant involvement with computing.

Board Approved Primary Resource:

Java Software Solutions for AP Computer Science A

J. Lewis, W. Loftus, and C. Cocking, 3rd Edition

ISBN: 978-0-13-137469-0

Additional Registration Information: Advanced Placement Computer Science A is designed to be the equivalent of an introductory college-programming course. It is highly recommended that students be concurrently enrolled in or have completed Algebra 2. This course does not meet the requirements for NCAA approved core courses. See your Dean for more information.