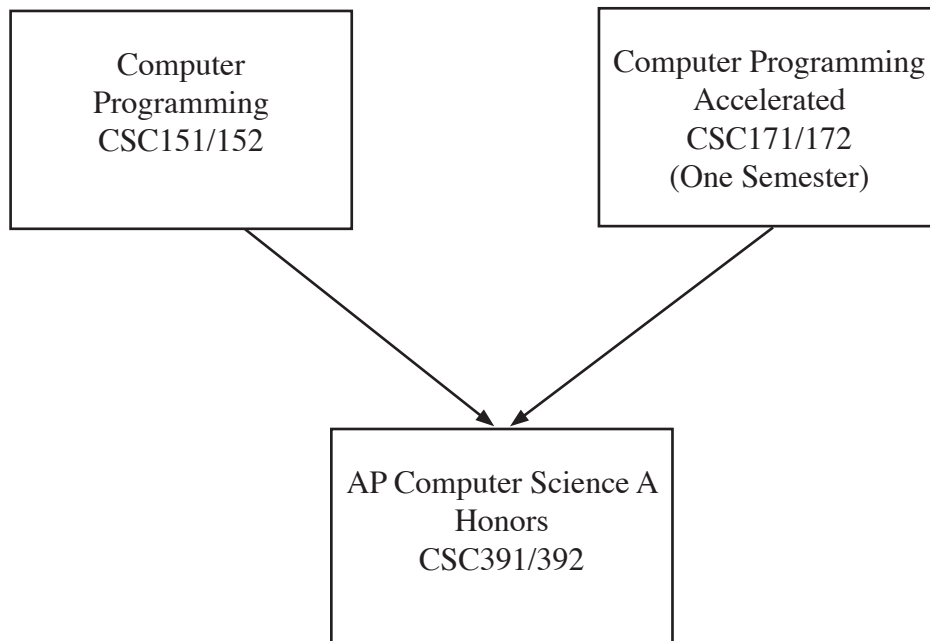


Computer Science



NOTE: Unless noted otherwise, courses are full year.

Electives

Computer Programming (College Prep)

CSC151-Semester 1, CSC152-Semester 2

Open to 9-10-11-12

Full Year

Prerequisite: Concurrent enrollment or credit in Algebra I

Students will learn to program computers using both Java and C++. The course will begin with introductory programs in C++. Students learn Java to write graphics-related programs which can run as applets on web pages. Students will also investigate the graphics features of Java applets. Java and C++ are both used to write simple text-based and graphics related computer games. Students cannot earn credit in CSC 151/152 and Computer Programming (Accelerated). Successful completion of this course prepares the student to continue in Advanced Placement Computer Science A.

Computer Programming (Accelerated)

CSC171-Semester 1, CSC172-Semester 2

Open to 9-10-11-12

One Semester

Prerequisite: Freshmen enrolled in Algebra I

This course introduces students to computer programming using both Java and C++. Students use Java to write several simple game applications as well as learn how to include buttons and pop-up menus within Java applets (which can be run as a web-page). Students use Java applets to write programs with both random and student-designed graphics/animations. C++ will be used for the first several weeks to introduce the general programming concepts that are needed in both C++ and Java. Introductory topics include using data files, translating formulas, using loops to get

the computer to automate steps, etc. Successful completion of this one semester course prepares the student for Advanced Placement Computer Science A.

Advanced Placement Computer Science A (Honors)

CSC391-Semester 1, CSC392-Semester 2

Open to 10-11-12

Full Year

Prerequisite: Computer Programming College Prep or Accelerated and concurrent enrollment or credit in Advanced Algebra or approval of Director

In the first semester, students learn about arrays, ArrayLists, sorting/searching techniques, class (object-oriented) design and stacks, and queues. Several graphics-oriented projects are used to illustrate and practice key concepts. During second semester students learn more advanced data structures such as linked lists, trees, sets, and maps. Students learn and focus on object-oriented programs. This AP course will prepare the student for the AP Computer Science exam. Students may earn one semester of college credit in Data Structures/Algorithms.