

AP College Board Course Description: AP Computer Science Principles

AP Computer Science Principles introduces students to the breadth of the field of computer science. In this course, students will learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They will incorporate abstraction into programs and use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical. It is important to note that the AP Computer Science Principles course does not have a designated programming language. Teachers have the flexibility to choose a programming language(s) that is most appropriate for their students to use in the classroom.

Johns Creek APCSP: Harvard CS50 AP

Johns Creek uses the replacement curriculum for APCSP developed by Harvard. This curriculum is an approved replacement syllabus that fully aligns with, and was rapidly approved by, the college board. It returns the rigor to the AP educational curriculum. Students at Johns Creek will go even further than this, by learning full-stack development to an internet cloud stack of servers used in our lab to enable a cutting-edge development environment. The course begins in the language C, progresses through Python, and is now offering introductory coding in C#/.NET. Web development is included across languages.

Successful CS50 AP students have the following characteristics:

- Solid organization skills
- Strong interest or curiosity in Computer Science
- Effective time management and executive function skills
- Willing ness to participate in classroom projects and team activities
- Ability to synthesize beyond reading information from sources
- Strong mathematics skills and/or algorithmic thinking
- This is the second course in 3 CS pathways, they should have previously completed the Introduction to Software technology class. The online versions do not sufficiently prepare students for the rigor of this course. Students with in-seat completion of IST have priority for seats in the class.

Expectations

Students will write a lot of source code and complete a significant number of projects. Spring semester involves completion of a master project, as computer science is now a full engineering discipline. All course standards are covered in the Fall semester, and the Spring semester is focused on in-depth real work project-based evaluation.

Assessments

Fall: Projects, Programs, Quizzes, Exams

Spring: Projects, Master Project, Presentations