

Computer Science Principles



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Class web site: couplands.net > CS Principles

Overview

Computer Science Principles (CSP) is a rigorous, entry-level course that introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. We use the curriculum developed by Code.org.

Course Outline

CSP-A (trimester 2)

Unit 1-1	Representing and Transmitting Information (7 days)
Unit 2-1	Encoding and Compressing Complex Information (7 days)
Unit 3	Algorithms and Programming (15 days)
Unit 5	Building Apps (26 days)

CSP-B (trimester 3)

Create Task	Programming project for AP Exam (12 days)
Explore Task	Research project for AP Exam (8 days)
Unit 1-2	Inventing the Internet (11 days)
Unit 2-2	Manipulating and Visualizing Data (14 days)
Unit 4	Big Data and Privacy (11 days)

Note: The units are out of order to allow completion of the Create and Explore tasks before the April 30 deadline.

AP Designation and Exam

This is the first year the College Board will offer the AP Computer Science Principle course and exam. See “AP Computer Science Principles Course and Exam Description”, which can be found on the web or our course web site, for details.

Skyline would like our Computer Science Principles class to be as inclusive as possible and is concerned that the AP designation may discourage some students from taking the class. Therefore each student will choose between two versions of the class: “AP Computer Science Principles” or “Computer Science Principles”. Both versions will be taught in the same classroom and cover the same material.

AP students will follow the College Board guidelines for the Create and Explore performance tasks (see below), including written responses and independent work. They will submit their performance tasks to the College Board in April for evaluation. Non-AP students will receive more teacher guidance on the performance tasks. Students who choose the AP version are encouraged but not required to take the AP exam, which will be given in May.

Like other AP classes, students taking the AP version will have their class grade weighted when computing their GPA. For example, a B+ (3.33) will become an A- (3.67) for GPA calculation. See “GPA” in the AAPS High School Course Selection Guide for details. These students will also have the class marked as AP in their transcripts.

Explore and Create Performance Tasks

Trimester 3 will begin with two projects, called performance tasks by the College Board. Together they form 40% of your AP test score and will form a significant part of the course grade also.

In the Explore task, you will have 8 hours of class time to explore a computing innovation of your choice. You will produce a computational artifact such as a graphic or video depicting the innovation and answer a series of written questions about the innovation.

For the Create Task, you will have 12 hours of classroom time to create a computer program of your choice which illustrates certain broad principles of computer science. Part of this work can be in collaboration with another student.

All students will complete the performance tasks as they are essential to the course and will form a significant part of the course grade. For AP students, both tasks will be submitted to the College Board for evaluation. Non-AP students are not bound by the College Board guidelines and may ask for additional guidance while working on the tasks. The detailed requirements for the performance tasks are in “AP Computer Science Principles Course and Exam Description” (on the web). We will spend considerable class time preparing you for these performance tasks so you can do your best work.