AP Computer Science Principles
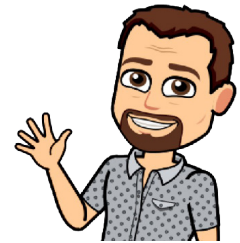
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1,000,000

Number of estimated computer science related jobs employers will not be able to fill by 2020 (Source: code.org)

70

Percentage of students nationally that have stated they want to pursue a computer science degree after this AP course (Source: code.org)

Welcome to AP Computer Science Principles! This year-long AP course dives into the fundamentals of computing, including (but not limited to) problem solving, working with data, understanding the Internet, cybersecurity, and programming. This course is slightly different from most other AP courses in that the student's AP score is broken down as follows:

Assessment	Percentage of AP Score
Explore Performance Task (due 4/30/20)	16%
Create Performance Task (due 4/30/20)	24%
74-Question Exam (5/15/20 @ 8:00 AM)	60%

Textbook/Curriculum - There is no textbook for this class. For our curriculum, we will be using resources from the Code.org website. All students will be expected to have an account on this website as well as use it regularly for various activities, reflections, assessments, etc.

What You Need For This Class - (1) Pen or Pencil (for notes and quizzes), (2) 3-ring binder (8.5 x 11 inches, 1/2 inch binder capacity), and (3) a personal Gmail Account (if you already have one, you can use that one).

Course Outlook

Below is an overview of the units in this course (Source: code.org):

1. **Unit 1 (The Internet)** - Learn how the multi-layered systems of the internet function as you collaboratively solve problems & puzzles about encoding & transmitting data, both 'unplugged' & using Code.org's Internet Simulator. (*Estimated Time: 5 weeks*)
2. **Unit 2 (Digital Information)** - Learn how computers store complex information like images, video, & sound. Use interactive widgets to explore concepts like image representation and compression. (*Estimated Time: 2 weeks*)
3. **Unit 3 (Intro to Programming)** - Learn the JavaScript language with turtle programming in Code.org's App Lab coding environment. Learn general principles of algorithms & program design that apply to any programming language. (*Estimated Time: 4 weeks*)
4. **Unit 4 (Big Data and Privacy)** - Research current events at the intersection of data, public policy, law, ethics, & societal impact. Learn the basics of how and why modern encryption works. (*Estimated Time: 4 weeks*)
5. **Explore Performance Task** - At the beginning of the 2nd Semester, students will complete the first of two performance tasks that will be submitted to the CollegeBoard as part of their AP Score. Includes eight hours of class time to complete this task (*Estimated Time: 2 weeks*)
6. **Unit 5 (Building Apps)** - This unit is set to begin 2nd Semester; continue learning how to program in the JavaScript language. Use Code.org's App Lab environment to create a series of applications that live on the web. Each app highlights a core concept of programming (*Estimated Time: 7 weeks*)
7. **Create Performance Task** - Students will work alone or with a partner in creating an application of some sort using programming (examples include by not limited to an app, video game, website, programmable robot, etc.). Includes twelve hours of class time to complete this task. (*Estimated Time: 3 weeks*)
8. **AP Exam Preparation** - Review of course material from throughout the year in preparing for the AP Exam (set for Friday, May 15, 2020 at 8:00 AM). (*Estimated Time: 2 weeks*)
9. **Final Class Project** - To be determined (*Estimated Time: 1 week*)

Grade Makeup

A standard grading scale will be used for the overall grade. Please note that I do not "round up" grades with 6-week progress checks. I will only round up grades at semester with a number of factors being considered (i.e. final project grade, attendance, etc.). Expect temporary grades to be updated on School Loop every 1-2 weeks. Parent contact will be made if grades fall below a 70% at any time during the grading period.

1. Employability Skills (20%) - Should be the easiest points in the class including being on time, participating in the daily in-class activities, and staying on task.
2. Reflection Write Ups (25%) -Throughout the semester, you will be asked to reflect on both unplugged and computer activities that we do in class (either on the code.org website OR written).
3. Exams (30%) - There will be exams at the end of each unit (sometimes two) which will test you on vocabulary terms and computer science content (both teacher created questions as well as sample questions from past AP Exams). There will be a final project completed as a part of this category 2nd Semester (TBA).
4. Performance Task Prep (10%) - We will be working on a number of activities that will prepare you for your (2) Performance Tasks including writing strategies, working with sources, and Practice Performance Tasks.
5. Explore/Create Performance Tasks (15%) - These Performance Tasks are completed as part of your AP Score (40% of your total score). They are not due to the College Board until April 30, 2020). A Practice Explore PT will serve as your 1st Semester Final while both the Explore & Create PT will be completed during the 2nd Semester (and serve as your final for that semester).

Other Things To Keep in Mind:

Restroom Passes - Any unused ones = extra credit (you get 3 every six-week grading period); going over means negative points; so use them wisely (while also remembering when you leave class, you are missing out on the activities we are working on).

Homework - Homework will be assigned to students whenever work outside the classroom is required to accomplish the educational objectives of the course. When homework is assigned, it will mostly relate to students preparing for the Explore and Create Performance Tasks as well as the AP Exam.

Make Up Work/Test Corrections - You are allowed as many days your absences are excused (must be an excused absence per the school) in making up work you miss. You will receive a 10% penalty each day your work is late (after the 5th day, the work will not be accepted). An assignment can only be made up in that 6-week grading period it took place (and will not be accepted afterwards). Class activities and reflection write ups must be made up outside of class (before school, after school, Saturday School, OR another set time). If a student receives a low score on an exam, there will be opportunities to come in and complete test corrections (students can earn 1/3 of a point back per question they correctly answer).

Computer Lab/Course Expectations

Computer Lab Etiquette - You must comply with all rules stated on the Los Osos High School Usage Contract (separate handout) regarding use of equipment, internet access, downloading, etc. See contract for stated consequences on breaking any of these rules.

No Food, Drinks, or Gum - Bottled Drinks OK

Electronic Devices- Cell phones and other electronic devices will be allowed in class at the teacher's discretion. Any electronic devices that become a distraction may end up in my "Phone Prison". If the problem persists, they may end up in the administration office.

Tardy Policy - Continued tardies at a job would get you fired! While I cannot fire you, being late to my class will bring on a number of consequences (detention slips & deduction in "Employability Skills" points). You need to be in my class by the tardy bell or you are late.

Trust - With an AP class comes an increased temptation of cheating on an assignment, a test, or even the Performance Tasks. I want to see what each one of you is capable of doing in here. But plagiarism & cheating will not be tolerated. First offense may result in a automatic zero & parent contact; future offenses may result in the same plus a referral to administration. If it is believed that the Performance Task(s) are not your own work, the CollegeBoard may be notified with the possibility of your Performance Task not counting towards your overall AP score.