Dallas High School
Home of the Dragons

AP Computer Science Principles Syllabus
2021-2022

Mr. Mahoney
Phone: 503-623-8336 x2728
Office Hours:
Periods 2 and 6
Monday, Wed-Friday during Applied Learning
Additional times by arrangement
Bob.Mahoney@dsd2.org

Course Description:

AP Computer Science Principles is a newer AP® one-year long course from the College Board. This course introduces students to the foundational concepts of computer science and explores the impact computing and technology have on our society.

The Mobile CSP course is a project-based coursed based on the theme of mobile computing. Mobile CSP is one of several curricula endorsed by the College Board and approved to use when teaching the AP CS Principles framework.. During the course, students complete two programming projects The project(s) conform to the College Board's **performance task** on *programming*. The emerging CS Principles AP course will use the performance task, in addition to a written exam, as a primary means for a student to demonstrate what they've learned.

With a unique focus on creative problem solving and real-world applications, the AP Computer Science Principles course gives students the opportunity to explore several important topics of computing using their own ideas and creativity, use the power of computing and programming to create artifacts of personal value, and develop an interest in computer science that will foster further endeavors in the field.

The course will be based on a mobile Computer Science Principles curriculum (Mobile CSP), which uses the mobile computing language, App Inventor 2 (for Android). It provides a rigorous, programming-based introduction to the principles of computer science. Student projects will focus on building socially useful apps using the App Inventor programming language. In this way, student learning will be associated closely with their interests and grounded in their schools, their homes, and their communities.

Reference Texts:

The Blown to Bits text is the primary text for the class and will be used for some assignments. You are not required to own or download the "App Inventor 2: Create Your Own Android Apps" e-book. It is included as a possible reference, if interested.

> *App Inventor 2: Create Your Own Android Apps*. David Wolber, Hal Abelson, Ellen Spertus, and Liz Looney O'Reilly Media, Inc., 2014 (view the Free Pre-publication Draft at http://www.appinventor.org/book2
>
> *Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion*. Hal Abelson, Ken Ledeen, Harry Lewis. Addison-Wesley, 2010 (Available via Free PDF Download at https://runestone.academy/runestone/books/published/mobilecsp/Unit1-Getting-Started/Impacts-of-CS-Blown-to-Bits-BB.html

Other Sources of Material:

- Canvas
- Potentially Google Sites
- App Inventor 2: http://ai2.appinventor.mit.edu/

Student Materials:

Students will be required to supply the following materials for the class

1. A Spiral Notebook. For time management, student organization and planning, a dedicated spiral notebook is highly recommended to hold class handouts, class work, and notes for this course.
2. Pens and/or pencils.
3. Headphones or Earbuds
4. Flash Drive (optional, but recommended)

Course Outline (subject to change):

Unit	Unit Topic	Unit Essential Question	Assessment Strategies
1	Preview and Setup	How are digital artifacts created and shared globally?	Tests and Projects
2	Mobile Apps	How do humans and computers interact efficiently?	Tests and Projects
3	Graphics and Images Bit by Bit	How do humans use a variety of inputs for computers to vary results for the user?	Tests and Projects
4	Animation, Simulation , and Modeling	How do computers model real-life properties through programming?	Tests and Projects
Exam	Mid-Term Exam	Mid-Term Exam	Mid-Term Exam
Task	Explore: Performance Task #1 Create: Performance Task #1	Research Paper & Project	Performance Task
5	Algorithms and Procedural Abstraction	How does a program use procedures to display and carry out tasks that humans can understand?	Tests and Projects
6	Communications and the Internet	How do computers send data through the Internet securely?	Tests and Projects
7	Using and Analyzing Data and Information	How do computers and corporations use data to make decisions?	Tests and Projects
Task	Explore: Performance Task #2 Create: Performance Task #2	Project	Performance Task Rubric
Prep	AP Exam Prep	AP Exam Prep	AP Exam
Exam	Final Exam	Final Exam	Final Exam

Standards to Be Assessed:

Educational Technology

ET.1 Creativity and Innovation: Students demonstrate creative thinking and problem solving skills to develop innovative products and processes using (digital) technology.

ET.2 Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, across the global community, to support individual learning and contribute to the learning of others.

ET.3 Research and Information Fluency: Students select and apply digital tools to gather, evaluate, validate, and use information

ET.4 Critical Thinking, Problem Solving and Decision Making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

ET.5 Digital Citizenship: Students understand human, cultural, and societal issues related to digital technology and practice legal, ethical, and responsible behavior.

ET.6 Technology Operations and Concepts: Students utilize technology concepts and tools to learn.

Other Standards
The standards will vary depending upon the assignment and will overlap into Math and Language Arts standards. We will support the Common Core State Standards in other areas. The course is based upon curricula that comply with the State of Oregon Educational Standards and the Common Core State Standards.

Career Related Learning Standards
Career-related learning standards (CRLS) are fundamental skills essential for success in employment, college, family, and community life and are embedded within the course.

Grading and Assessment:

The following scale will be used to determine grading. Please note that there are no +/- grades.

90-100	Mastery	A
80-89	Exceeds	B
70-79	Meets	C
60-69	Passing	D
Below 60	Fail, No credit	F

If you have a question or concern about your grade, you must meet with me after class, during my office hours or before or after school. Class time will not be used for a discussion of your grade.

Given that students have daily access to computers, all students are expected to enroll in Home Access, which enables them to check their grades for this class, as well all other classes.

Class Policies

Attendance

The attendance policy of the classroom is the same as the general policy of Dallas High School.

- Students are expected to attend each class and be on time.
- Attendance is crucial for success in this class as the work is cumulative.

Assignments:

- Most of the assignments and class PowerPoints are available in Canvas.
- All assignments must be done on the computer and saved, preferably to a flash drive, unless otherwise instructed by the teacher.
- Most work will be turned in via Canvas or graded at your workstation
- It is the responsibility of the students to ensure that they have completed assignments in a timely manner, consistent with the deadlines posted online. Students turning in work after the posted deadline will earn 50% credit of the corrected value.

Exams:

Students will have periodic tests and quizzes and are responsible for the related vocabulary words and definitions. If a student desires to retake any test, they must study for the exam prior to retaking it.

Late / Make-Up Work
- Once instruction is provided in each area, students will work at their own pace.
  - Students that fail to complete assignments by the cut-off date will receive 50% of the grade they would have received unless there are exigent circumstances.
  - No late assignments will be accepted in the last 2 weeks of class.
- I will not pursue you about your missed work. Remember that it is your responsibility to determine what assignments you are missing.
- **App Projects**: Students are provided ample time in class and all materials are accessible from any home or school computer with internet access. Students are advised since the first week that if they need more time than what is provided in class that they are expected to find time outside of class.
- Students will have 1 week after the due date to complete their projects. Due Dates will be posted. Any projects submitted beyond the 1-week grace period will receive an automatic 50% off their score**.**
- **Create Task:** *This does not include the Create task. They are considered final assessments and have firm deadlines.*

- **Portfolio Entries:** After each lesson, students are responsible for reflecting and practicing the concepts learned. Portfolio entries are due within one week after the lesson. The due date will be posted in the classroom or in the Canvas or Runestone site. **Portfolio entries will not be accepted after the due date.**

Classroom Expectations

Appropriate behavior on behalf of all students is a key element make the classroom an environment that is conducive to learning. Students exhibiting inappropriate behavior, including talking during direct instruction, will be asked to modify their behavior, as it negatively affects the rest of the class. If students persist in distracting others or failing to follow classroom expectations, they will be referred to the administration of the school. n

Please make every attempt to:

1. Be in your assigned seat and ready for instruction at the start of class.
2. Bring the required material to class (paper, pencil, notebook)
3. Not talk to other students during direct instruction.
4. Not talk to others while students are speaking to the instructor.
5. Not use rude, vulgar, or otherwise inappropriate comments.
6. Remain seated until the end of class.
7. Follow the school rules set forth in the Student Handbook (dress code, etc.)
8. Not Bring food into the classroom without prior permission.
   (Water in a container with a lid is permitted.)
9. Not throw objects such as paper, pencils, and erasers.
10. Not pass notes to others during class.
11. Clean the area of your workstation before class is dismissed.
12. Not cheat. (Also note that you will receive a score of zero on the assignment, and a referral to the Vice-Principal for violating the Academic Integrity standards of the school.)

Computer Use:
1. Students are not allowed to change computer settings unless directed by the instructor; this includes screen savers, icon positions, or other computer settings. Students are not to remove or disassemble any components including the mouse.

2. ***Students will not be allowed to play games on the computers or access the internet unless it is directly related to the completion of an assignment*** in this class, as this class is designed to teach the students content that increases their employability.

3. *Violation of any of the above expectations is sufficient grounds for permanent removal from the class.*

Cheating:

Unless explicitly noted otherwise, the work in this course is to be done **independently**. Discussions with other students on the assignments should be limited to understanding the statement of the problems (except when assignments are to be done in groups in which case it is expected of members of the same group to work together).

The faculty and administration of Dallas High School believe that honesty and integrity are personal attributes worth nurturing in our students. Because we value the educational and skill development opportunities provided by classroom assignments, research projects, tests, and quizzes, we expect students to express academic integrity by doing their own work and properly documenting information gathered from other sources. Congruous with this belief is our resolve to handle those who violate the principles of academic integrity with stringent consequences. (See also insubordination in the student handbook, available online)

- First Offense:
    - Contact with the parent
    - In-school suspension or suspension for up to three days

- Second and Subsequent Offenses:
    - Contact with parent, conference with parent & student
    - In-school suspension and/or suspension for a maximum of ten school days.

Electronic Device Policy

All students who are in possession of an electronic device, such as a cell phone, are expected to not use the device during any instructional time. If a student refuses to stop using the device, they will be referred to the main office for resolution of the matter. It is vital that all students comply with this policy to ensure an optimal learning environment.

College Board Testing

Since this course is an AP class, all students are expected to take the AP test. Even if a student decides not to take the test, they will still be held responsible for completion of the Create Tasks associated with the College Board. They will be responsible for meeting the deadlines for completion and submission established by the College Board.

Students will be graded by the College Board on a 1-5 scale. Many (if not all) colleges award credit for the achievement of certain scores (generally a 4 or 5, although some colleges will award elective credit for a 3).

In AP Computer Science Principles, the AP score is awarded based on 2 items:

1. **AP Exam (Multiple Choice Test 70%):** All students will take the multiple-choice portion of the AP exam on Monday May 9th at noon. The exam will take two hours and has traditionally had 74 questions.

2. **Create Task (30%):** Students completed a practice version of the Create Task during the first semester. All students will complete another Create Task that will be submitted to the College Board. The date for the College Board Create Task will be provided to the student. The class deadline is several days before the College Board deadline to account for unforeseen events such as trouble in uploading the material. The Create Task #2 involves students creating their own app and writing a report on the process. Students will submit the report and a 1-minute video describing their app. Students will be provided at least 12 hours of class time as required by the College Board to complete this project (per College Board). *Extra time needed will have to be used outside of class*.
   a. Create Task Deadline for the College Board: May 2, 2022 (11:59 p.m.) is the deadline to submit your Create performance task as final.
   b. Create Task Deadline for the class will be announced and will be before the College Board deadline noted above.

Students are responsible for following the rules governing the AP College Board Create Task, as they have been provided the relevant material in class, and they have access to it online.

For the AP College Board Create Task, the instructor MAY NOT provide any guidance or help, even though the tasks will be completed in class. These projects are to be treated as a portion of the AP Exam and therefore an instructor can be held responsible for cheating if assistance is provided to the students.

AP College Board tasks are not eligible for the 1 week "grace period" or 50% late submissions. They must be submitted by the College Board deadline or earlier as announced int class, with no exceptions, even if the student chooses to not take the exam.