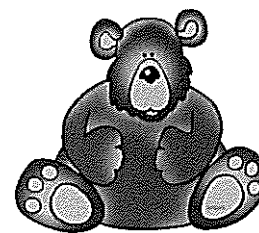




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## AP Computer Science Principles Syllabus 2018 - 2019

### The Course

AP Computer Science Principles introduces students to the foundations of computer science with a focus on how computing powers the world. Along with the fundamentals of computing, students will learn to analyze data, create technology that has a practical impact, and gain a broader understanding of how computer science impacts people and society. CS Principles has been designed to be a course that fully addresses the seven "Big Ideas" of computer science and six "Computational Thinking Practices", as specified by the College Board's AP Computer Science Principles curriculum framework.

#### Big Ideas

Abstraction  
Data and Information  
Programming  
The Internet  
Creativity  
Algorithms  
Global Impact

#### Computational Thinking Practices

Connecting Computing  
Creating Computational Artifacts  
Abstracting  
Analyzing Problems and Artifacts  
Communicating  
Collaborating

### AP Assessment Experience

The AP Computer Science Principles assessment consists of two parts: a through-course assessment and the end-of-course AP Exam. Both of these will measure student achievement of the course learning objectives. For the through-course assessment, students will upload digital artifacts and written responses via a web-based digital portal.

### Materials

- Pencil & other writing utensil
- Binder
- Memory Stick/flash drive
- Lined Filler Paper

### Software Resources (all freely available online)

- Processing - <https://processing.org>
- JavaScript, using Code.org's App Lab environment
- Internet Simulator provided by Code.org
- Other software is optional and may be used by individual students

### Text & Print Resources

- Code.org
- Online interactive textbook provided by UTeach CS Principles and the University of Texas at Austin  
<https://uteachcs.gitbooks.io/uteach-cs-principles/content/?key=5c24-736d-802f>
- *Blown to Bits* by Hal Abelson, Ken Ledeen and Harry Lewis

### Critical Thinking and Coding Skills

Students are expected to actively employ computational thinking techniques and practices throughout all of their work. They will be encouraged to practice thinking about the logic and sequencing of a solution to a problem and to then express that solution with clarity and precision using code, pseudocode, and/or natural language, as appropriate to the situation.

### Equipment

Students have access to computers during class as well as before and after school. The Code.org and Processing programming environments will be provided as well as the use of the internet for their textbook and other resources. Students may find it useful to be able to practice programming on their computers at home. All course materials are available from the Internet free of charge.

### Tutoring

Tutoring will be available most days after school and in the morning by appointment. Tutoring is highly recommended for struggling students.

**Grading Policy**

Major Assessments	45%
Minor Assessments	20%
Daily	15%
Final Exam	20%

**45% Major Assessments:** Students will take 3-4 tests each semester. Students must ensure they are fully prepared to take the test since no retakes are allowed. Students are strongly encouraged to be present on test days. When a student misses class the student is required to take the assessment on scheduled day or on day of return if previously announced. The through-course assessment consists of two tasks completed over 20 or more days in class. These tasks will each count as a major assessment. However, the grade for each of these assessments will not be added until after the tasks are finalized through the web-based digital portal. These assessments may not be graded until after the closing date. A comprehensive exam similar in format to the end-of-course portion of AP Computer Science Principles Exam will be administered 1-3 weeks prior to the AP exam. The length of this test is such that the student may need to stay after school; this test cannot be completed during a regular classroom period.

**20% Minor Assessments:** Quizzes/Programs will be used throughout a unit to determine mastery of concepts along the way. These will serve as formative feedback and great study tools for unit tests.

**15% Daily Work and Homework:** Daily work and homework are vital parts of learning and are requirements for this class. Assignments will be checked randomly. To receive full credit for assignments, all parts of the assignment are expected to be attempted. When work is required, answers alone will not be sufficient enough to receive full credit. Missed assignments may be completed according to late work procedures in the student handbook.

**20% Final Exam:** The final exam will be a comprehensive test in the fall and a comprehensive project in the spring.

**Classroom Rules, Procedures and Student Expectations**

<b>Be Prepared</b>	<ul style="list-style-type: none"> <li>• Keep up with Classwork/Homework</li> <li>• Keep up with your flash drive</li> <li>• Writing Utensil (pencil on assessment days)</li> <li>• 3-ring binder/paper</li> </ul>
<b>Expect Excellence</b>	<ul style="list-style-type: none"> <li>• Participate in subject related activities for the entire class period</li> <li>• All work turned in by a student must be work done by that student</li> <li>• Take notes</li> <li>• Keep an organized notebook</li> <li>• Don't get behind. It is a mistake to leave your reading and homework until the last minute</li> </ul>
<b>Always Be on Time</b>	<ul style="list-style-type: none"> <li>• Be on time to class each day</li> <li>• Turn in work on time</li> <li>• Make up work in a timely fashion</li> </ul>
<b>Respect Everyone</b>	<ul style="list-style-type: none"> <li>• Respect the opinions of others</li> <li>• Respect your teacher and her decisions</li> <li>• Do not make disrespectful comments about other students, teachers, or school staff</li> <li>• Be able to work both individually and cooperatively (Remember that cooperative work requires an equal amount of contribution from all members of the group)</li> </ul>
<b>Show Bear Pride</b>	<ul style="list-style-type: none"> <li>• Do not bring outside food/drink into class (exception: bottled water in a sealable container)</li> <li>• Keep the classroom clean and throw away trash</li> <li>• Always have a positive attitude in class!</li> <li>• Pay attention to due dates</li> <li>• Plan for your future</li> <li>• Take responsibility for your actions</li> <li>• Read and follow all rules in the Student Handbook</li> </ul>

## Consequences for Failure to Follow Rules and Procedures:

- Step 1: Warning
- Step 2: Warning & Parent Email
- Step 3: Parent phone call and/or detention
- Step 4: Office referral

Please Note: The discipline plan is progressive and follows the PBIS structure. Some offenses may automatically move a student to step 4 (for example: severe disrespect, fighting, cheating, etc.)

**Cheating:** Any student caught cheating will be referred to the office under a discipline referral. Refer to the student handbook for consequences. In Computer Science cheating includes using major portions of someone else's program as your own and also failing to credit someone who assisted you with a program.

**Late/Missing Work Procedure:** Assignments not turned in on time will result in academic detention. Failure to serve academic detention will result in an office referral. Often in business environments, timeliness is paramount. Some assignments will have a timing component. Failing to meet deadlines on these assignments may result in a grade reduction. Refer to the handbook for the late work procedures.

**Teacher Communication:** I answer email, as well as return phone messages, and encourage parents to contact me regarding the education of their student. I encourage you and your student to monitor the grades in this course. Please do not hesitate to contact me with questions or concerns.

Occasionally email does not go through. If you do not hear from me a day or two after sending an email, assume I did not receive the email and pursue a different form of communication.

**Topic Outline:** Following is an outline of the major topics covered in Computer Science Principles

CR1a	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P1: Connecting Computing.
CR1b	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P2: Creating Computational Artifacts.
CR1c	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P3: Abstracting.
CR1d	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P4: Analyzing Problems and Artifacts.
CR1e	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P5: Communicating (both orally and written).
CR1f	Students are provided with opportunities to meet learning objectives connected to computational thinking practice P6: Collaborating.
CR2a	Students are provided with opportunities to meet learning objectives within Big Idea 1: Creativity.
CR2b	Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction.
CR2c	Students are provided with opportunities to meet learning objectives within Big Idea 3: Data and Information.
CR2d	Students are provided with opportunities to meet learning objectives within Big Idea 4: Algorithms.
CR2e	Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming.
CR2f	Students are provided with opportunities to meet learning objectives within Big Idea 6: The Internet.
CR2a	Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact.
CR3	Students are provided the required amount of class time to complete the AP Through-Course Assessment <i>Explore - Impact of Computing Innovations</i> performance task.
CR4	Students are provided the required amount of class time to complete the AP Through-Course Assessment <i>Create - Applications from Ideas</i> performance task.