

CLASS SYLLABUS – Virtual 2020

COURSE TITLE:
COURSE #:

AP Computer Science Principles

11.0190000

COURSE DESCRIPTION



AP Computer Science Principles is the newest AP® 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. 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 to create artifacts of personal value, and develop an interest in computer science that will foster further endeavors in the field.

INSTRUCTOR:

Mr. Kenneth Lee

PREREQUISITES:

A grade of B or higher in Algebra 2



PROGRAM CONCENTRATION:

Business Education & Computer Science



PROGRAM PATHWAY:

Computer Science – Programming



CAREER OPPORTUNITIES:

Programmer, Applications Programmer, Applications Designer, Systems Analyst, Project Manager, IT Consultant, Software Developer, etc.

TEXTBOOK(s):

We will use BlownToBits as a reference as well as CodeHS and/or Code.org for many of the computer related activities. No other textbook is assigned at this time. Look for the Barron's Guide for APCSP if available!

SOFTWARE:

We will utilize a variety of software during this course including LightBot, Javascript, Python, CodeHS, Code.org widgets, HTML and various other online tools and utilities!

METHODS OF INSTRUCTION:

Class lecture/demonstration, question/answer, individual and group work, on-line work, topic videos, computer lab instruction, audio-visual aids, student reports/projects, case studies, and guest speakers.

RECOVERY POLICY

Roswell High School students will be allowed to redo, resubmit, and/or retake assignments. If needed, students will be provided **three opportunities** to demonstrate their mastery of the learning target(s) beyond the original due date set by the teacher to obtain a passing grade of 70 on the assignment. All recovery assignments are due by the final day of class.

SUPPLIES:

Student Agenda, Binder / Notebook, Pen / Pencils, Box of Tissues (requested), one ream of 8.5x11 printer paper (requested), one USB port flash drive (recommended)

TEACHER CONTACT:

The best way to reach me is via email at Lee@fultonschools.org
I encourage all students who have questions to see me for extra help as soon as they need it! Office hours can be found on my web site at the address below.

TEACHER WEB SITE:

Course information can be found at www.MrLeeComputing.org
Students MUST follow course calendar closely for curriculum and important updates!

Roswell High School URL Bell Schedule Fall 2020	
8:20 – 9:00	1 st Period (40 min)
9:05 – 9:45	2 nd Period (40 min)
9:45 – 10:00	Break (15 min)
10:00 – 10:40	3 rd Period (40 min)
10:45 – 11:25	4 th Period (40 min)
11:25 – 12:25	Lunch/Study Hall (SSS, TAG, Remediation) (60 min)
12:30 – 1:10	5 th Period (40 min)
1:15 – 1:55	6 th Period (40 min)
2:00 – 3:30	Teacher Office Hours/ Independent Student Study (90 min)

A typical class in remote learning mode

- Synchronous Lesson – LIVE (15 minutes)
- Independent Work (20 minutes)
Task or practice assigned during LIVE session, small group instruction, ALEKS, or student led activities.
- Closing – LIVE (5 minutes)
Bring students back for debrief and learning summary.
- Asynchronous Lesson – 2-3:30pm should be used for homework and self-study each and every day!

* Note that Computer Science Test/Quiz days are Mondays and Thursdays!

CURRICULUM.....

Computational Thinking Practices:

Six computational thinking practices represent important aspects of the work that computer scientists engage in!

- P1 – Computational Solution Design** Design and evaluate computational solutions for a purpose.
- P2 – Algorithms and Program Development** Develop and implement algorithms.
- P3 – Abstraction in Program Development** Develop programs that incorporate abstractions.
- P4 – Code Analysis** Evaluate and test algorithms and programs.
- P5 – Computing Innovations** Investigate computing innovations.
- P6 – Responsible Computing** Contribute to an inclusive, safe, collaborative, and ethical computing culture.

Big Ideas:

The five big ideas of the course encompass foundational ideas in the field of computer science.

Big Idea 1: Creative Development (CRD)

When developing computing innovations, developers can use a formal, iterative design process or experimentation. While using either approach, developers will encounter phases of investigating and reflecting, designing, prototyping, and testing. Additionally, collaboration is an important tool to use at any phase of development because considering multiple perspectives allows for improvement of innovations.

Big Idea 2: Data (DAT)

Data is central to computing innovations because it communicates initial conditions to programs and represents new knowledge. Computers consume data, transform data, and produce new data, allowing users to create new information or knowledge to solve problems through the interpretation of this data. Computers store data digitally, which means that the data must be manipulated in order to be presented in a useful way to the user.

Big Idea 3: Algorithms and Programming (AAP)

Programmers integrate algorithms and abstraction to create programs for creative purposes and to solve problems. Using multiple program statements in a specified order, making decisions, and repeating the same process multiple times are the building blocks of programs. Incorporating elements of abstraction, by breaking problems down into interacting pieces, each with their own purpose, makes writing complex programs easier. Programmers need to think algorithmically and use abstraction to define and interpret processes that are used in a program.

Big Idea 4: Computing Systems and Networks (CSN)

Computer systems and networks are used to transfer data. One of the largest and most commonly used networks is the Internet. Through a series of protocols, the Internet can be used to send and receive information and ideas throughout the world. Transferring and processing information can be slow when done on a single computer but leveraging multiple computers to do the work at the same time can significantly shorten the time it takes to complete tasks or solve problems.

Big Idea 5: Impact of Computing (IOC)

Computers and computing have revolutionized our lives. To use computing safely and responsibly, we need to be aware of privacy, security, and ethical issues. As programmers, we need to understand how our programs will be used and be responsible for the consequences. As computer users, we need to understand how to protect ourselves and our privacy when using a computer.

A detailed course description can be found at

<https://apstudent.collegeboard.org/apcourse/ap-computer-science-principles>

AP Exam Credit Information

Please visit <https://apstudent.collegeboard.org/creditandplacement> to learn if the colleges and universities you are considering grant credit for a passing grade on the AP Computer Science A level exam.

Each AP Student is required to “join” their AP class/section online through

<https://myap.collegeboard.org/login> (Use your existing account! *Do not create a new one!!*)

* You must select YES/NO to declare your intention to take the AP exam at this time. There is a \$40.00 cancellation fee if you change your mind after November 15th!

NOTEBOOK

Students are expected to keep all work for this course in a 3-ring binder. The notebook should be divided into five sections, which should be labeled as follows:

- Notes / Handouts
- Homework / Classwork
- Programming Assignments
- Quizzes / Tests
- Reference / Exam Prep

EVALUATION

Tests – Tests help to prepare students for the AP examination by using both multiple-choice and free-response questions. There will be one test administered for each chapter/section. Each test will be announced in advance. Any student absent the day of the review will be expected to take the test with the class on the scheduled day.

Major Programming Projects – A major programming assignment is one that combines a series of concepts into one challenging program. This assignment may require both in-school and out-of-school effort. There will be several major labs assigned each semester. For each assignment, you will be required to turn in a hard copy AND save the assignment to the appropriate folder on the shared drive. Labs are intended to be individual work. You will receive limited assistance from me and a set amount of time to complete the assignment. You must adhere to the class policies of ethics in creating code. Failure to do so will result in the issuing of an Honor Code Violation and a zero on the assignment.

Lab Exercises, Programming Problems, Homework, and Quizzes – All are assigned at the teacher’s discretion. Lab exercises are programming assignments or worksheets that focus on a single new concept as well as previous material. Quizzes are designed to determine whether students are keeping up with their assigned reading and will most likely be unannounced.

Final Exam – The comprehensive final exam administered at the end of each semester will be worth 15% of the semester grade. No exemptions for Honors or Advanced Placement courses will be granted.

Make-up Work Policy

Attendance is very important. Excessive absences will likely prevent students from successfully completing the course. It is solely the student's responsibility to make contact with the teacher to initiate all make-up work. I encourage you to obtain phone numbers/email addresses from at least two other classmates who can be contacted for make-up work or assistance with assignments. Please read and follow the Roswell High School policy on make-up work as printed in your student agenda. Students are expected to make up missed tests and quizzes as soon as possible and they only may be made up before or after school during the times designated in the beginning of this document. According to school policy, work made up due to an unexcused absence will receive a 10% grade reduction.

AP Computer Science Plagiarism Statement

Plagiarism is the act of copying someone else's work without permission. Plagiarism can refer to the replication of a written work verbatim, or merely the reproduction of someone else's ideas. Acts of plagiarism might include, but are not limited to 1) copying a classmate's code; 2) using code from a published source without proper documentation; 3) using excessive editing suggestions of another student, parent, or tutor. Plagiarism on any project at Roswell High School will result in a zero for the assignment and an honor code violation. Unless directly stipulated by the teacher, collaboration on computer programs is not acceptable. Cheating on tests will result in a zero for that assessment. For more information on the honor code policy, please refer to the student agenda. Note that students who willingly provide other students with access to their work are also in violation of the Honor Code.

Classroom Plagiarism Policy

In the comment section of each program, students will have an opportunity to list sources of assistance they have received (including web addresses, parents, other students, etc.) This line is required, and students, by leaving it blank, are stating that they received no assistance in writing the program.

Computer Usage Policy

1. I will limit my use of technology in school to the educational objectives established by my teachers.
2. I will not retrieve or send unethical, illegal, immoral, inappropriate or unacceptable information.
3. I will follow the rules on network etiquette, which includes the use of appropriate language and polite responses. I will not use abusive language of any type, including swearing and name-calling.
4. I will not share my login, home address, or phone number with another user for any purpose.
5. I understand that information received on-line is private property, unless specified. I will not plagiarize information received in any form.
6. I will not use or access another person's account, and I will not share my password with anyone else.
7. I will not attempt to bypass the security built into the system or network, and I recognize that doing so will result in immediate cancellation of my privileges as well as disciplinary measures dictated by this school's administration.
8. I will not interfere with or disrupt network users, services or equipment. Disruptions include, but are not limited to, distribution of unsolicited advertising, propagation of computer viruses, and using a network to make unauthorized entry to any other machine accessible via a network.
9. I will not use technology access provided by Fulton County Schools for illegal purposes of any kind.
10. I will not use technology access to transmit threatening, obscene, or harassing materials
11. I will not engage in any on-line chat rooms nor play any on-line games unless specifically authorized to do so by my teacher for educational purposes.
12. By signing this syllabus – waiver and consent, I understand and agree that Fulton County Schools will not be held responsible if I participate in any such activities.
13. I understand my responsibility as a user of telecommunications. I have read the above rules and realize that any infraction will cancel my user privileges and may result in further disciplinary action, including suspension from school.
14. I agree to adhere to any additional computer usage policies as set forth in the school agenda.

EVALUATION STRATEGIES:

Grades should be based on the student's mastery of standards. A student's final course grade for the marking period is equal to the average of the grades completed.

FCS Board Policy has set the requirement for 9 – 12 graded summative assignments/assessments per semester. Per GADOE guidance, "students will be allowed to redo, resubmit, and/or retake assignments." If needed, students will be provided three opportunities to demonstrate their mastery of the learning target(s) beyond the original due date set by the teacher. FCS will adopt a NO ZERO policy during Remote Learning. An "I" will be entered in Infinite Campus for missing assignments/assessments. At the end of a grading period, an "I" for incomplete will be entered on a student's report card <i>if a student does not complete 80%</i> of the summative assignments/assessments.	<p>SUMMATIVE ASSESSMENTS</p> <p>Final Exam 15%</p> <p>Other Assessments 85%</p>
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GRADES:

Grades will be assigned according to the following schedule

A – 90 and Above B – 80-89 C – 70-79 F – 69 and below OR an Incomplete not resolved by the end of the school year or summer. I – Incomplete: Less than 80% of summative assignments were completed AND/OR the final exam was missed!
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NOTE: *If the student is failing class at the time of the AP Exam, student must pay for exam to take it.*

<p>Student</p> <ul style="list-style-type: none"> <input type="checkbox"/> I have read and understand this course syllabus outlining the classroom policy, rules, grading procedure, and recovery policy. <input type="checkbox"/> I understand that it is my responsibility to keep my parents/guardians abreast of my current average. <input type="checkbox"/> I've recorded Mr. Lee's email address. <input type="checkbox"/> I understand that extra help is available according to the schedule outlined in the syllabus, assuming I put forth diligent effort on a daily basis. <input type="checkbox"/> I understand that assignments will be posted on the course website. 	<p>Parent/Guardian</p> <ul style="list-style-type: none"> <input type="checkbox"/> I, too, have read and understand the course syllabus outlining the classroom policy, rules, grading procedure, and recovery policy. <input type="checkbox"/> I understand that the student is responsible to keep a record of his/her grades. <input type="checkbox"/> I've recorded Mr. Lee's email address. <input type="checkbox"/> I understand that assignments will be posted on the course website. www.MrLeeComputing.org
_____ Student Signature	_____ Parent/Guardian Signature
____/____/____ Date	____/____/____ Date
_____ Print Name	_____ Print Name
_____@_____ Parent/Guardian's Email Address	(_____) _____ - _____ Parent/Guardian's Telephone Number

MISSION

Computer Science at Roswell High School
Our mission is to provide relevant instruction, employ students with workplace readiness skills, and establish relationships to make the connection between school, work, and the community.