College Board Computer Science AP Principles

Mr. Joe Cusack
Jcusack1@kleinisd.net
Room 502 / Klein Collins High School
Computer Science instructor / (832) 484-5500 Ext 45246
Mr. Cusack's Web site: www.joecusack.com
Course: 4902 / AP CMP SCI PRIN

Prerequisite: Proficiency in the knowledge and skills relating to Technology Applications and Algebra 1
Required Course Supplies:
Pencils and Paper everyday
Major exam test Day: Friday

Course Description:
AP Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They incorporate abstraction into programs and use data to discover new knowledge. Students also explain how computing innovations and computing systems—including the internet works, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.
Computer Science areas covered in this course.

- Creative Development (Collaboration, Program Function and Purpose, Program Design and Development, Identifying and correcting Errors)
- Data (Binary Numbers, Data Compression, Extracting Information from Data,
- Using programs with Data)
- Algorithms and Programming (Variables and Assignments, Data Abstraction, Mathematical Expression, String, Boolean Expressions, Conditionals, Iteration, Developing Algorithms, Lists, Binary Search, Calling Procedures, Developing Procedures, Libraries, Random Values, Simulations, Algorithmic Efficiency, Undecidable Problems)
- Computer Systems and Networks (The Internet, Fault Tolerance, Parallel and Distributed Computing)
- Impact of Computing (Beneficial and Harmful Effects, Digital Divide, Computing Bias, Crowdsourcing, Legal and Ethical Concerns, and Safe Computing)

Late Work Guidelines
-10 points off each day late
Active participation and group collaboration Will be evaluated and given a grade.
Tutorials: Usually 6:15 am till the start of school every morning.

Re-teach/Re-test Procedure
Review material and test corrections, Re-take test within 5 days, Replacement grade may not exceed 70, Re-test policy does not apply to major projects.
The Klein Collins HS Grade Repair Policy does not apply to this course

Textbook
Blown to Bits: Your Life, Liberty, and Happiness after the Digital Explosion 1st Edition by Hal Abelson (Author), Ken Ledeen (Author), Harry Lewis (Author) – Free online

Major online Resources used:
Khan Academy
https://www.khanacademy.org/
W3School
https://www.w3schools.com/
Code.org
https://code.org/
Amazon Future Engineer- Project STEM
https://projectstem.org/users/sign_in
College Board
https://account.collegeboard.org/

Student Absence Procedures
One day to make up work for each day absent
Grades: 9-12 .5 Credit

Grade replacement:
I offer grade replacement for an assignment. If a student competes on my Computer Science UIL team. I will replace a minor or major grade with a 100. Minor grade replacement for any ranking in the contest. Major grades replacement will happen if the student makes a grade of 75 or more on the UIL test (Perfect score 240). No limit to the number of contests you can attend. Replacement grade must be used in the current grading period.