Computer Science Principles

Instructor: Janna Han
Weekly Classes on Tuesdays and Thursdays, 6:30-7:30 P.M. EST

Course Description

Aimed at advanced middle school and incoming high school students, this course will supplement students who are enrolling in their schools' AP Computer Science Principles class. It will aid students in getting ahead. This course will be based on the contents of the AP exam, including everything from undecidable problems to basic programming skills. This course is also useful for students who simply want to learn basic computing and programming concepts.

Curriculum:

Unit 1: Digital Information
- Binary numbers
- Data in bits
- Data compression
- Data analysis

Unit 2: Computer Networks
- The Internet
- Internet Protocols
- Fault Tolerance
- Parallel and Distributed Computing

Unit 3: Programming
- Variables
- Expressions
- Strings
- Booleans
- Conditionals
- Iteration
- Lists
- Procedures
- Undecidable Problems

Unit 4: Cybersecurity & Computing Impacts
- Effects
- Digital Divide
- Bias

- Crowdsourcing
- Legal issues
- Viruses

Meeting Schedule:

7/18 Meeting 1: Unit 1
7/20 Meeting 2: Unit 1
7/25 Meeting 3: Unit 2
7/27 Meeting 4: Unit 2
8/1 Meeting 5: Unit 3
8/3 Meeting 6: Unit 3
8/8 Meeting 7: App Creation Project
8/10 Meeting 8: App Creation Project
8/15 Meeting 9: Unit 4
8/17 Meeting 10: Unit 4