

## **AP Computer Science Principles Course Syllabus 2018-19**

**INSTRUCTOR:** Gary Jung, Ph.D., Director of Technology

### **TEXTBOOKS AND RESOURCES:**

This is the third year that College Board has offered this course. In many ways it is still under development. We have chosen to use the resources of code.org as the provider for our course of study.

### **METHODOLOGY:**

The combination of internet research, reading the resources, video learning, lectures, in-class discussion, and hands-on experience are geared toward the accomplishment of the course's learning objectives.

The students will have a class account on code.org and work through the online tasks and use the extensive online tools provided.

### **OBJECTIVES:**

#### **Seven Big Ideas**

The course is organized around seven big ideas, which encompass ideas foundational to studying computer science.

- Big Idea 1: Creativity
- Big Idea 2: Abstraction
- Big Idea 3: Data
- Big Idea 4: Algorithms
- Big Idea 5: Programming
- Big Idea 6: The Internet
- Big Idea 7: Global Impacts

#### **Six Computational Thinking Practices**

Computational thinking practices capture important aspects of the work that computer scientists engage in.

- P1: Connecting Computing
- P2: Creating Computational Artifacts
- P3: Abstracting
- P4: Analyzing Problems and Artifacts
- P5: Communicating
- P6: Collaborating

At the completion of the course, the students should be able to articulate the seven big ideas and have developed skills in each of the six computational thinking practices. They should be prepared to take the next step in their computer science education with understanding and confidence.

### **PERFORMANCE TASKS:**

In addition to taking a 75 question national exam, the students are required to complete two performance tasks during the course and submit them to College Board prior to the written exam.

The first is “Explore - Impact of Computing Innovations” (a written project investigating a computing innovation).

The second is “Create - Applications from Ideas” (a computer programming project on a topic of interest or one that solves a problem).

### **GRADING:**

Coursework through code.org = 50%  
Assessments = 50%