AP Computer Science Principles Course Description

The following objectives laid out by The College Board will be met through the use of MatLab and other software programs.

Big Idea 1: Creative Development
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.

Big Idea 2: Data
Data are central to computing innovations because they communicate initial conditions to programs and represent 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 these data.

Big Idea 3: Algorithms and Programming
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
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.

Big Idea 5: Impact of Computing
To use computing safely and responsibly, we need to be aware of privacy, security, and ethical issues. As programmers, we need to understand the potential impacts of our programs and be responsible for the consequences.

The "Create Task" and end of year exam:
In order to earn college credit for this course, students must submit a project and take a cumulative multiple choice exam in May. Students will design and implement a program to solve a problem, enable innovation, explore personal interest, or express creativity. Their development process should include exploration, investigation, reflection, design, implementation, and testing of their program. This project will be submitted to College Board in the Spring.

High Bluff Academy is accredited by the Western Association of Schools and Colleges (WASC). The above course is approved by the University of California system (A-G) and the National Collegiate Athletic Association (NCAA).