Computer Programming I

Pre-Requisites: Algebra I, Geometry; Students should have advanced computer skills.
Credits: 0.5 (per segment)
Estimated Completion Time: 2 segments/32-36 weeks
Earliest Start Date: March 2014

Description

How can we control the most powerful tool ever invented if we cannot speak its language?

Computer Programming 1 is a two-semester course that enables students to learn two modern programming languages: Python and Java. The course teaches programming using real-world, practical examples. Students learn Python by controlling the motion and sensory capabilities of a robot. They learn Java by manipulating graphics, images, and audio. Programming is easier than most students think, and students show what they know by choosing projects that are of interest to them. Major colleges and universities are now using this approach to teach introductory computer programming, so students in this course learn the skills necessary to tackle advanced work.

Major Topics and Concepts

Required Materials

AA alkaline or rechargeable NIMH batteries (12)
Microphone and speakers or headset

Course Objectives

Grading Policy

Besides engaging students in challenging curriculum, the course guides students to reflect on their learning and evaluate their progress through a variety of assessments. Assessments can be in the form of practice lessons, multiple choice questions, writing assignments, projects, research papers, oral assessments, and discussions. The course will use the state-approved grading scale and each course contains a unique end of course assessment. This assessment counts for 20% of the student's overall grade and must be passed with a score of 60% or higher.

Communication Policy

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful