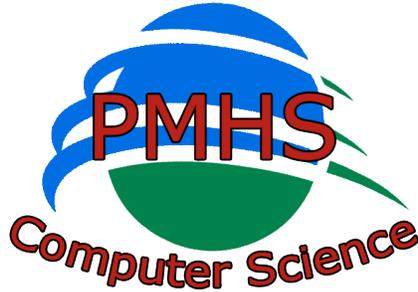


COMPUTER SCIENCE
Mr. Dharminder Sohal
Director of Mathematics



ANIMATION WITH COMPUTER PROGRAMMING (3240)

1 Credit

Grades: 9, 10, 11, 12

Prerequisite: 80+ average in Algebra I/(formerly Integrated Algebra) **OR** 80+ average in Math 8R and teacher recommendation

Course Description: Students will explore the exciting world of computer programming by being introduced to fundamental programming concepts using the high-level languages of Terrapin Logo graphics, ALICE, and Lego Mindstorms. Terrapin Logo is a full-featured computer language that is designed to support constructive learning. The student will gain practical experience in “turtle graphics” and will be exposed to beginning level programming at the same time. This course is also an introduction for learning to program with ALICE Animation. Students will create animation projects using Alice, a software package for creating animation in small virtual worlds using 3D models in Pixar and Disney animation style. Students will also learn ROBOTICS using Lego Mindstorms and Robot-C to introduce the way computers control motors and sensors to make things move, light up and make sounds. Actual hands-on designs will be programmed, documented and constructed using a team approach. This course is the first in a sequence of four Computer Science courses offered at Patchogue-Medford HS.

WEBSITE DESIGN AND PROGRAMMING IN JAVA (3250)

1 Credit

Grades: 9, 10, 11, 12

Prerequisite: Algebra I/(formerly Integrated Algebra) with an 80 or higher average

Course Description: This course is designed for students interested in coding and designing websites and learning the internet programming language Java. The first half of the course is

devoted to website design. Using Hyper-Text Markup Language (HTML), students will learn the code that produces the data on websites. Students will also learn to style their HTML with Cascading Style Sheets (CSS). Students will be using the most up-to-date technology to code compelling web pages. The second half of the course is devoted to learning programming in the computer language Java. Topics covered will include: input, output, looping methods, swing and the beginnings of object-oriented programming. This course is a prerequisite for the Advanced Placement Programming course and therefore is considered college preparatory and a great senior year course.

ADVANCED PLACEMENT COMPUTER SCIENCE (3320)

1 Credit

Grades: 10, 11, 12

Prerequisite: Instructor approval required

Course Description: This course is equivalent to a first semester college-level Computer Science course. Problem solving and algorithm design will be emphasized. Basic computer programming concepts of input, output, conditionals, looping, functions, sorting, searching, advanced data structures and object oriented programming with classes will be covered. The programming language used will be Java. College credit may be received for grades of three or higher on the Advanced Placement examination taken in May. ***All students enrolled in this class are expected to take the College Board AP exam.***

HONORS COMPUTER SCIENCE (3325)

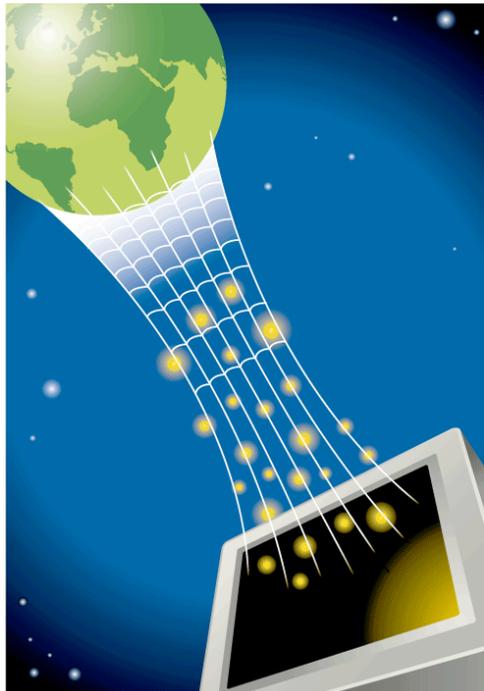
1 Credit

Grades: 11, 12

Prerequisite: Instructor approval required

Course Description: This course is equivalent to a second semester college-level programming course. It is possible to take Honors Computer Science and AP Computer Science at the same time with instructor approval. This course is a formal in-depth study of algorithms, data structures (including dynamic structures) and object oriented programming using the Java programming language. Topics will include pointers, advanced sorting and searching, trees and linked lists.

Students will also learn advanced Graphical User Interface programming using Java Swing components. This type of programming is a precursor to App development.



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