An hour of code.
A lifetime of change.

JAVA01/01P- Programming with Scratch

The fundamental concepts of programming are introduced using Scratch, a software developed by a team at MIT, and will have students think like programmers. Through this Scratch-based program, students understand the fundamental ideas about computers and programming, and develop some basic problem-solving and project design skills.


STUDENT LEARNING OUTCOMES:

- Learn about problem-solving and project-design skills
- Logical reasoning, debugging problems
- Developing ideas from initial conception to completed project
- Understand fundamental ideas about computers and programming

JAVA02/02P - Introduction to Java

Programming using the Java syntax will be introduced using a popular software called Eclipse. Students will start with creating simple programs and then enhance them using input/output, calculations, decision making, and loops.

STUDENT LEARNING OUTCOMES:

- Define and implement classes and methods as well as document code. Understand objects, return types, parameters
- Understand basic inheritance, errors, method calls, and decision making
- Produce fully functional and well documented programs in Java using Eclipse
- Improve classroom learning through student collaboration
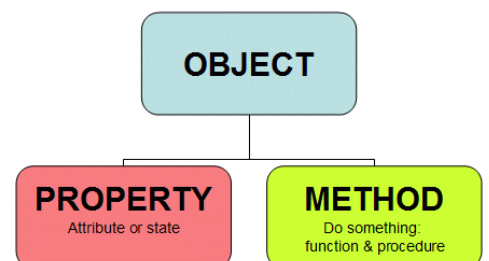
JAVA 03, 04, 05, 06, Project - Advanced Java Programming

This course introduces students to advanced features of Java programming language. Students will learn how to use inheritance, various data types and exception handling. Additionally, students will learn how to incorporate graphical user interfaces (GUIs) into their programming applications. Students will also learn how to apply object-oriented design and programming principles to their programs.

STUDENT LEARNING OUTCOMES:
- Demonstrate understanding of basic structure of Java programming
- Understand the concept of Object-orientated design
- Learn Hands-On Development with teacher support and exercises on each topic covered in class
- Produce Java programs with all the knowledge learnt in this course

PYTHON01/01P - Intro to Python Programming

This course introduces students to the Python Programming language. Students will learn how to use Python using the IDLE Integrated Development Environment. Students will start creating simple programs and then enhance them by using input/output, calculations, decision-making, and loops. Additionally, this course teaches students advanced features of the Python Programming Language. Students will learn how to make and develop their own Classes, arrays, and exception handling. Additionally students will learn how to incorporate the PyGame library into their programming applications. Students will also learn how to apply object-oriented design and programming principles into their programs.

STUDENT LEARNING OUTCOMES:
- Understand basic Python syntax. Define and implement functions as well as document code
- Understand return types and parameters. Define and implement Classes and arrays
- Understand the concepts of object-oriented design through Python
- Incorporate PyGame in creating simple animations and games

C++01/01P

Here's your chance to learn how to program the easy way in C++. Introduction to C++ Programming is a project-oriented course taught by a master programming instructor and published author. You'll get right to programming in this course--even if you have no prior programming experience! Before you know it, you'll be putting together programs that have their own windows and controls, and you'll see how easy programming really is.

STUDENT LEARNING OUTCOMES:
- Learning about algorithms
- Define and implement classes and functions as well as document code
- Write a first function, then return from a function and parameterize a function
- Combine functions with branches and loops and use incremental development with functions
- Write structs for grouping data, combine structs and functions, then combine structs and vectors
- Write classes that group functions and data
- Produce fully functional and well documented programs in C++