

Programming II – High School

COURSE DESCRIPTION: This introductory-level course presents the understanding of Java and how to build and compile a stand-alone application (working with real-world scenarios). This course is designed especially for students who have very little background, but have taken the Programming I: VB.NET course. This course concentrates on Java programming language, built-in data types, control structures, classes, objects, inheritance, and polymorphism. By the end of the course the student will be able to write basic programs using Java as well as basic applets using updated techniques. Students can pursue further instruction in Java programming and other programming languages.

COURSE OBJECTIVES:

- The student will understand the evolution of Java.
- The student will write basic Java programs.
- The student will compile and run his/her own program.
- The student will understand variables and operator usage in a Java program.
- The student will grasp the key concepts of OOPS.
- The student will implement Inheritance in Java program.
- The student will handle custom and system errors.
- The student will work with arrays (single, two, multi).
- The student will use threads in Java program.
- The student will learn about GUI (Graphic User Interface) using Java 1.6 or higher.
- The student will handle strings effectively.

PREREQUISITES: Programming I, Basic Computer Fundamentals

COURSE LENGTH: One Semester

REQUIRED TEXT: No required textbook for this course.

MATERIALS LIST:

JDK 1.6 (or higher version) *****Free Download*****

http://java.sun.com/javase/downlo_ads/index.jsp

COURSE OUTLINE:

Unit 1: Introducing Java

- Section A - Introduction to Java
- Section B - Getting Started with Java

Unit 2: Basics

- Section A - Basic Language Elements
- Section B - Java Operators
- Section C - Java Control Statements
- Section D - Java Access Modifiers

Unit 3: Arrays

- Section A - Creating and Using Arrays
- Section B - Classifications of Arrays
- Section C – Array lists
- Section D – Sorting
- Section E - Searching

Unit 4: Object-Oriented Programming

- Section A - Classes and Objects
- Section B – Constructors
- Section C - Class Inheritance
- Section D - Object Casting
- Section E - Abstract, Interface, and Polymorphism
- Section F - Overloading and Overriding

Unit 5: Strings

- Section A - String Class
- Section B - Strings

Unit 6: Exception Handling, Assertions

- Section A - Exception Handling
- Section B – Assertions
- Section C - Threads

Unit 7: GUI Introduction

- Section A - GUI Introduction
- Section B - Applets
- Section C – AWT
- Section D - Events

Final Project