# Introduction to Computer Science with Java

## Course Materials

Students are required to bring to class a laptop computer, either a PC with Windows 7 or 10 or a MACBook with at least 16GB of memory (or the equivalent). The students will need to have permissions to install software on their computers. They will install Java JDK and Eclipse.

The textbook is Starting Out With Java: Early Objects, by Tony Gaddis, Chapters 1 – 7

Other Resources: Code.org (Computational Thinking)

## Course Intent

This is course is an introduction to computer science and is designed to prepare students for more advanced courses including AP Computer Science A and AP Computer Science Principles.

## Course Description

The course will cover aspects of computer science (hardware vs software, types of programming languages, algorithms, abstraction, sorting algorithms, etc.) with an emphasis on computational thinking. The course will also focus on programming using Java as the development language. It will cover these topics: Java fundamentals including datatypes, variables (naming, scope, identifiers, etc.), classes and objects, Boolean expressions, decision statements (if/else statements), looping (while statements, for statements, loop control variables), and arrays.

There will be homework everyday, either or both reading and coding. There will be a keystone project the students will be required to code.

## Course Duration

The class will meet daily, Monday through Friday, 4 hours per day, or 20 hours per week, for 6 weeks, totaling 120 hours.

## Evaluation

There will be either a test or coding project for each topic. Grading will be based upon test scores, homework and final project.