

# High School Syllabus

**Department:** Mathematics

**Course #:** 40474W

**Course Title:** Computer Programming Using Java

**DESCRIPTION OF COURSE:** Students will use Eclipse to program in the Java Language. The course begins with learning the basics of structured programming, including if ...else, loops and functions. The student will move on to the concepts of object-oriented programming. The student will implement classes of software libraries. The student will design classes which instantiate objects and call subroutines from parent programs. Student will demonstrate their achievement of the outcomes of the course through the completion of programs, projects, and tests. Students will take the Java final exam at the end of the course.

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT
Getting Started with Java	10 days	15.4.12.H; 15.4.8.J Business, Computer and Information Technology Standards
Introduction to Defining classes, Control Statements, GUI	10 days	15.4.12.H; 15.4.8.J; 15.4.12.E
Arrays, Structures, Recursion, and Classes	5 days	15.4.12.H; 15.4.8.J
Implementing Lists, Stacks, and Queues	10 days	15.4.12.H; 15.4.8.J
Implementing Sets and Maps	10 days	15.4.12.H; 15.4.8.J
Implementing Trees and Priority Queues	10 days	15.4.12.H; 15.4.8.J
Graphics Files	10 days	15.4.12.H; 15.4.8.J
Applets, and Swig	10 days	15.4.12.H; 15.4.8.J

**RESOURCES:** Fundamentals of Java, Second Edition, Lambert and Osborne

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