

Java 1 Course Syllabus

Objectives

This course provides a basic overview of Java and programming principles, using various practical application examples to see results of what Java is capable of. These skills are also the building blocks used across all programming languages, so the concepts students learn in this course can be applied universally. We break down the major topics into "Modules" that focus on each topic one at a time.

Module Topics

1. Programming Basics - Understanding of basic printing, primitive data types, variables, and user input
2. Conditionals - Understanding boolean operators and how to construct complex conditional statements using `if`, `else if`, and `else` statements.
3. Loops - Create programs that can perform actions until conditions are met, or repeat actions concretely
4. Methods - Define reusable code that can be applied throughout your program or used in your own code libraries
5. Data Structures - Understand how and why programmers use specific formatted collections of data to architect programs
6. Projects - Several challenging projects to test mastery of Java

Topics and Schedule

Module 1	Topic - Programming Basics
1-1	Basics
1-2	Variables and Data Types
1-3	More on Variables
1-4	User Input
1-4 Project	Math Quiz

Module 2	Topic - Conditionals
2-1	Relational Operators
2-2	Logical Operators
2-3	If Statements
2-4	Else Statements
2-5	Else If Statements
2-6	Nested Conditionals
2-6 Project	Biometric Scanner

Module 3	Topic - Loops
3-1	While Loops
3-2	Counting with While Loops
3-3	For Loops
3-4	Nested Loops
3-4 Project	Number Sorter

Module 4	Topic - Methods
4-1	Methods
4-2	Parameters and Returning Values
4-3	Implementing Methods
4-4 Project	Calculator

Module 5	Topic - Function Basics
5-1	Arrays

Module 5	Topic - Function Basics
5-2	ArrayLists
5-3	Enhanced For Loop
5-4	Maps
5-4 Project	Trivia Game Implementation

Module 5	Topic - Projects
6-1	File Input and Output
6-1 Project	Time Tables
6-1 Project	Horoscope Generator
6-2	Planning Adventure RPG
6-2 Project	RPG
6-3	Turn Based Battle Planning Phase
6-3 Project	Turn Based