COURSE SYLLABUS

Java Programming Summer Program Online (High School & College)

Learn the fundamentals of Java programming and prepare for AP Computer Science or college-level programming. Beginners will become skilled coders through our project-based curriculum.

Group classes (Live Online) and onsite training are available for this course. For more information, email onsite@graduateschool.edu or visit: https://www.graduateschool.edu/courses/java-summer-course



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Course Outline

Section 1

Coding Overview

- Lexical & Syntax Analysis
- Working with the Terminal
- Computer Systems
- First Program

Variables, Data Types, and Operators

- Basic Variable Usage
- Data Types
- Operators
- Proper Programming Practices

Section 2

Control Flow

- Conditional Statements
- Truth Tables
- For Loops
- While Loops

Functions

- Declarations
- Overloading

- Return Values

Section 3

Arrays, Strings, and Dictionaries

- Array Processing
- Multi-dimensional Arrays
- String Methods
- String Manipulation
- Operations in Dictionaries

Section 4

Input/Output Files

- Streams and Files
- String Formatting
- Redirecting Output

Section 5

Object Oriented Programming

- Encapsulation
- Classes
- Inheritance
- Polymorphism
- Abstraction

Section 6

Recursion

- Recursive Functions
- Recurrence Relation
- Base Case Analysis
- Motivation Behind Recursion