



FULL STACK DEVELOPMENT COURSE STRUCTURE 2025

PROGRAMMING LANGUAGE FUNDAMENTALS: PYTHON & JAVA

88 hours

Basics · Hardware and Software Architecture · Computer and Networking Basics · Software Infrastructure and Applications · Numbering Systems Notation · Open Source and Open Standards · Development Platforms · Integrated Development Environment (IDE) Basics · Compiler and Builder · Programming Language Basics · Data Types · Operators · Statements · Functions · Symbol Presentation and Coding · Array · Basic Programming Patterns · Practicing · Sequential and Binary Search · Sorting · Reversing · Merging · Object-Oriented Programming (OOP Principles: Encapsulation, Inheritance) · Polymorphism · Classes and Objects · Practicing in Python and Java

FRONTEND JAVASCRIPT, REACT FRAMEWORK

168 hours

HTML Basics · CSS Styles · CSS Flex-box · Responsive Design Principles · CSS Animation · JavaScript Basics · DOM Interactions · JS Language Features (ES6+) · JS Functions and Closures · JS Asynchronous Programming (Promises, Async/Await) · JS OOP Principles · JS REST API Integration · TypeScript Basics · TypeScript Types and Interfaces · Advanced TypeScript Features (Generics, Utility Types) · React Intro · Virtual DOM · Main React Hooks · React Vite · SPA Navigating · React - Fetch Library · ReactJS: Props, Components, States, Forms, Events, Routers · Redux Basics · Advanced Redux Patterns (Thunk, Saga) · Redux Toolkit · UI Library · Testing React Applications (Jest)

BACKEND JAVASCRIPT, NODE.JS

84 hours

Node.js Intro · Modules Model · Event-Driven Principles · Streams · HTTP Server · Express Framework · REST API with Express · Routing and Parameters · Error Handling in Express · Authentication and Authorization · Security Best Practices · MongoDB Basics · SQL Basics · WebSocket · Node.js Debugging · Async Programming · Dependency Management with npm/yarn · Testing Node.js Applications

JAVA OOD/OOP & DATA STRUCTURE, AWS CLOUDING

164 hours

JAVA Integrated Development Environments · Types and Variables · Statements and Operators · Object Oriented Programming · Java Virtual Machine · Junit Test-Driven Development · Primitives and Classes · Immutable vs Mutable classes · Algorithms and Data Structures · UML · Exceptions and exceptions handling · Collections Maps · IO Streams · Stream API · File System · Socket · Console · Multithreading · Race Conditions, Synchronization and DeadLocks

CLOUD AWS

SOA & Clouding Basics · AWS Introduction · IAM Principles · Basic AWS Services · Serverless Application Model · Microservices Architecture · Docker & AWS Fargate · AWS Lambda Functions

TOTAL THEORETICAL HOURS

504 hours

REAL PROJECT DEVELOPMENT (frontend and backend application)

100 hours

Full development process with application design and coding using the most popular version control system and deploying on cloud.

TOTAL HOURS

604 hours*

* — Tel-Ran Educational Center may adjust program content based on technology updates while maintaining the total study hours. Changes may occur without prior notice to students.

** — Free Webinars: Additional free webinars are held regularly, covering topics discussed in class and providing homework analysis.