



BASIC PROGRAMMING BP COURSE STRUCTURE 2024

PROGRAMMING LANGUAGE FUNDAMENTALS

80 hours

Basics · Hardware and Software Architecture · Computer and Networking Basics · Software Infrastructure and Applications · Numbering Systems Notation · Open Sources and Open Standards · Development Platforms Integrated Development Environment · 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 · Java Basics · OOP Implementation in Java · Java Practicing

WEB PROGRAMMING

120 hours

WEB Clients Overview HTML · HTML Elements · HTML 5 · CSS Styles · CSS Flex-box · CSS Animation · Bootstrap · JavaScript Basics · DOM Interactions · JS Language · JS functions · JS OOP Principles · EcmaScript 2015+ · JS Promises · AJAX · JS Frameworks · jQuery · NPM · Webpack · Babel · ReactJS: Props, Components, States, Forms, Events, Routers · Redux · Adaptive Web Applications for Mobile

CORE JAVA

200 hours

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 Model-View-Controller (MVC) Paradigm · UML · Exceptions and exceptions handling · Collections Maps · IO Streams · Stream API · File System · Socket · Console · Multithreading · Race Conditions, Synchronization and DeadLocks

JAVA TECHNOLOGIES +

104 hours

Spring Framework Overview · Spring Boot Applications · SOA (Service Oriented Architecture) · Rest Controller (WEB services) · Spring Data MongoDB Repositories · Spring Data JPA · Repositories (Hibernate) · Spring Security (Authentication, Authorization, Accounting) · High Level Architecture · Scalable · Architecture · MicroServices · BigData Overview & Kafka · Database and SQL Basics · Relational Databases · Tables · Logical Structure · Keys · Indexes · SQL Development Platform · MongoDB · MongoDB in Cloud · CRUD Operations: Create, Read, Update, and Delete Data · Mongo Aggregation

TOTAL THEORETICAL HOURS

504 hours

REAL PROJECT DEVELOPMENT (frontend and backend application)

150 hours

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

TOTAL HOURS

654 hours*

* — Tel-Ran educational center can make changes and adjustments to this program due to the relevance of the studied technologies without losing the total number of study hours without notifying students.

** — doesn't include FREE webinars that are held regularly on topics covered in class and on homework analysis