Tel·Ran
IT Educational Center

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FULL STACK + AI DEVELOPMENT COURSE STRUCTURE **2026**

PROGRAMMING LANGUAGE FUNDAMENTALS: PYTHON **60 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 · Classes and Objects · Practicing in Python · Using AI tools for programming and training

FRONTEND JAVASCRIPT, REACT FRAMEWORK **160 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 - Query Library · ReactJS: Props, Components, States, Forms, Events, Routers · Redux Basics · Advanced Redux Patterns (Thunk, Saga) · Redux Toolkit · UI Library · Testing React Applications (Jest) · Using AI tools for frontend development

BACKEND JAVASCRIPT, NODE.JS **80 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 · Logging Principles · Security Best Practices · MongoDB Basics · SQL Basics · WebSocket · Node.js Debugging · Async Programming · Dependency Management with npm/yarn · Testing Node.js Applications · Using AI tools for backend development

PYTHON & AI TOOLS **80 hours**
OOD (Object-Oriented Design) & UML & AI · Algorithm Complexity · Python Collections & Persistence · Python Packages for AI · YOLO AI Model for Image Processing · FER AI Recognition Python Library · Python & OpenAI API · AI & ML Fundamentals

AWS & MICROSERVICES **80 hours**
AWS Introduction · IAM Principles · Basic AWS Services (IAM, EC2, S3, CloudWatch, Lambda, API Gateway, SNS, AES, Dynamo DB, CloudFormation, CloudFront, RDS, Elastic Cache) · Serverless Application Model · Microservices Architecture · Docker & Kubernetes

TOTAL THEORETICAL HOURS **460 hours**

REAL PROJECT DEVELOPMENT (frontend and backend application) **80 hours**
Full development process with application design and coding using the most popular version control system and deploying on cloud.

TOTAL HOURS **540 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 Weekly Webinars. We run additional free webinars every week, reinforcing class topics and reviewing homework. These sessions are not included in the core syllabus and are provided at no cost.