2-Year Full-Stack Development with Azure Integration Course.

Year 1: Fundamentals and Core Development

Semester 1: Foundational Skills (4 Months)

- Programming Fundamentals

  - Introduction to Programming (Logic building, pseudocode)

  - C# Basics (Variables, Data Types, Loops, Conditionals, Functions)

- Frontend Development

  - HTML5: Semantic Markup, Forms, Multimedia

  - CSS3: Styling, Layouts (Flexbox, Grid), Animations, Responsive Design

  - Bootstrap: Framework Overview, Grid System, Components

- Version Control

  - Git Basics, GitHub for Collaboration

- Soft Skills

  - Communication, Team Collaboration, and Debugging Techniques

Semester 2: Backend Development and Databases (4 Months)

- C# Advanced

  - Object-Oriented Programming (OOP), Exception Handling, File I/O

  - LINQ and Asynchronous Programming

- SQL and Database Management

  - Database Fundamentals, Writing SQL Queries

  - Advanced SQL (Joins, Indexing, Views, Stored Procedures)

- ASP.NET Core MVC

  - MVC Architecture, Razor Pages, Data Binding

  - Dependency Injection, Middleware, Routing

- Introduction to Azure

  - Azure Portal Overview

  - Basics of App Service and Azure SQL

Year 2: Advanced Full-Stack Development and Azure Integration

Semester 3: Full-Stack Application Development (6 Months)

- ASP.NET Core Web APIs

  - RESTful API Development

  - Authentication (JWT) and Authorization

  - API Versioning, Error Handling

- Modern Frontend Frameworks

  - JavaScript: ES6+, DOM Manipulation, Fetch API, Modules

  - Angular Basics: Components, Modules, Services, Forms, Routing

- React Basics: JSX, Components, Props, State Management

- Azure Integration Basics

  - Hosting APIs on Azure App Service

  - Database Integration with Azure SQL

  - Monitoring and Debugging with Azure Application Insights

Semester 4: Advanced Cloud and Framework Integration (6 Months)

- Advanced Frontend Development

  - Angular Advanced: RxJS, State Management with NgRx

  - React Advanced: Context API, Redux, Routing

- Enterprise-Level Development

  - Implementing Microservices Architecture

  - ASP.NET Core Minimal APIs

  - Middleware, SignalR for Real-Time Communication

- Azure Developer (AZ-204)

  - Cloud-native App Development

  - Using Azure Functions, Logic Apps

  - Security in Azure (Key Vault, Managed Identity)

- Capstone Project

  - Build a Full-Stack Application integrating Azure (Web App + APIs + Database + Deployment)

Additional Features

- Workshops and Hands-on Labs

  - Deploying and Scaling Apps on Azure

  - GitHub Actions for CI/CD Pipelines

- Certifications

  - Prepare for AZ-204 (Developing Solutions for Microsoft Azure)

  - Optionally add other certifications like Azure Fundamentals (AZ-900) or React/Angular certifications