Full Stack .NET Developer Course Syllabus

This course is designed to help **IT and Non-IT students** become **job-ready Full Stack .NET Developers**. It covers **C# programming, backend development with ASP.NET Core, frontend development (React), databases, DevOps, cloud deployment, and real-world projects**. The focus is on **hands-on learning, industry-relevant tools, and interview preparation**.

🕐 **Course Duration: 6 Months** 🎯 **Class Duration:2hrs (Mon to Fry)**

📌 **Prerequisites: No prior coding experience required (Basic IT knowledge is beneficial)**

📖 **Course Modules**

📌 **Module 1: Introduction to Full Stack Development**

- What is Full Stack Development? Overview of **Frontend, Backend & Databases**, Understanding Software Development Lifecycle (SDLC), Full Stack Developer Career Path

📌 **Module 2: C# Programming Fundamentals**

- Introduction to C# & .NET Framework, Variables, Data Types & Operators, Control Statements & Loops, Object-Oriented Programming (OOP) in C#, Exception Handling & File Handling, Working with Collections & LINQ

📌 **Module 3: Advanced C# & Multithreading**

- Multithreading & Asynchronous Programming, Delegates, Events & Lambda Expressions, Working with APIs & JSON Data, Introduction to **Entity Framework (EF) Core**

📌 **Module 4: Database Management with SQL & NoSQL**

- SQL Basics: DDL, DML, DCL Commands, Joins, Subqueries & Indexing, Database Normalization, Working with **Microsoft SQL Server & MySQL**, Introduction to NoSQL & **MongoDB**

📌 **Module 5: Backend Development with ASP.NET Core**

- Introduction to **ASP.NET Core MVC & Web API**, RESTful API Development with ASP.NET, Authentication & Authorization (JWT, OAuth), Dependency Injection & Middleware, Implementing CRUD Operations, Hosting & Deployment of ASP.NET Applications

📌 **Module 6: Frontend Development with HTML, CSS, JavaScript**

- HTML5, CSS3, and Bootstrap Basics, JavaScript ES6+ Features, DOM Manipulation & Event Handling, AJAX & Fetch API for API Calls

📌 **Module 7: Advanced Frontend with React**

- Introduction to **React.js**, Components, Props & State Management, Routing & Navigation, API Integration & Asynchronous Calls, Redux (State Management) in React, Building a Single Page Application (SPA)

📌 Module 8: Version Control & DevOps Basics

- Introduction to **Git & GitHub**, Git Commands & Branching Strategies, CI/CD with Azure DevOps & Jenkins, Basic Cloud Deployment (Azure/AWS)

📌 Module 9: Deployment & Cloud Integration

- Deploying .NET Applications on **Azure/AWS**, CI/CD Pipeline Setup for Full Stack Projects, Monitoring & Logging with **Azure Monitor**

📌 Module 10: Final Project & Interview Preparation

- Full Stack Project Development (E-Commerce, ERP System, etc.), Resume & LinkedIn Profile Optimization, Mock Interviews & HR Round Preparation, Soft Skills & Freelancing Opportunities

💡 Tools & Technologies Covered

✅ **Backend Development**: C#, ASP.NET Core, Web API
✅ **Frontend Development**: HTML, CSS, JavaScript, React.js
✅ **Database**: Microsoft SQL Server, MySQL, MongoDB
✅ **Version Control**: Git, GitHub
✅ **DevOps & Cloud**: Docker, Azure DevOps, AWS, Jenkins
✅ **Project Management**: JIRA, Agile Methodology

🚀 Final Outcome

By the end of this course, students will be:
✅ **Proficient in C# & .NET Full Stack Development**
✅ **Able to Build & Deploy Web Applications**
✅ **Job-Ready for Full Stack Developer Roles**
✅ **Confident in Coding Interviews & Freelancing**