



.NET Framework Advanced Training Curriculum

ASP | MVC | Advanced C# | WCF | WPF

STRUCTURE



.NET Framework Advanced Training Curriculum

“Take your career to the next-level by completing .NET advanced training with us!”

Course Objectives:

- Learn .NET Framework fundamentals and all about C# programming language.
- Learn to write code quickly and accurately using best debugging tools in dotnet.
- Learn using the Microsoft IDE Visual Studio that is considered the best practice for programmers.
- Gain the essential skills to build and deploy robust apps for Windows, web sites, web services, and mobile apps with technologies such as ASP.NET MVC, C#, and Visual Basic.
- Prepare yourself for the Microsoft certifications and gain credentials to make yourself stand ahead of the crowd.
- Start applying for jobs and get hired by top industries worldwide.

Course Description:

Giving developers the ability to write code quickly and accurately along with the debugging tools they need, Microsoft's Visual Studio continues to be the IDE of choice for Windows and web developers.

With our .NET foundation course and Visual Studio training, you can gain the essential skills to build and deploy robust apps for Windows, web sites, web services, and mobile apps with technologies such as ASP.NET MVC, C#, and Visual Basic.

For more advanced .NET programmers, take your skills to the next level by learning best practices and design patterns for Microsoft's .NET Framework. Plus, our Microsoft authorized courses can prep you for the Visual Studio certification you need including MCSA: Web Applications.

Course Highlights:

- Module 1: Advanced ASP.NET concept and MVC
- Module 2: Advanced C#
- Module 3: Learn WCF
- Module 4: Learn WPF
- Module 5: Placement Guide

All the best for a new beginning and successful career ahead!

Course Content:

Module 1: ASP.NET and MVC

1. **MVC Techniques**
 - Controller Techniques
 - Defining Filters
 - Implementing Compression
 - Model Binding Techniques

2. **Client and Server Platform Features**
 - Caching
 - Globalization and Localization
 - Html5 Semantic Tags
 - Html5 Accessibility
 - Search Engine Optimization

3. **Error Handling, Logging and Monitoring**
 - Getting Started with Code Contracts
 - Using Code Contracts
 - Handling Errors
 - Implementing Logging and Monitoring

4. **Dependency Injection**
 - Di Concepts
 - Di Techniques in ASP.Net MVC 6
 - Design and Architecture Considerations

5. **Test Driven Development with ASP.Net MVC**
 - Recap of Tdd
 - Introduction to Xunit.Net
 - Walk-Through of Using Tdd With ASP.Net MVC 6

6. **Web Sockets**
 - Understanding Web Sockets
 - Defining A Web Sockets Server
 - Defining A Web Sockets Client
 - Using Signal R

7. **Implementing Middleware Components**
 - Overview of The Http Pipeline
 - Overview of Owin
 - Implementing Owin Middleware Components

8. **Designing and Implementing Security**
 - Overview of Authentication
 - Implementing Windows Authentication
 - Implementing Forms Authentication
 - Implementing Auth Authentication

9. Additional Security Techniques

- Implementing Claims-Based Authentication
- Managing Data Integrity
- Implementing A Secure Site

10. Windows Azure Development

- Windows Azure Concepts
- Windows Azure Architecture and Components
- Creating a Cloud Service Application
- Running a Cloud Service Application

11. Deploying Services to Azure

- Web Deploy Using Visual Studio
- Web Deployment Packages
- Command-Line Tools for Web Deploy
- Deploying to Windows Azure

12. Learning Objective

- Practice TDD with Xunit.Net & Asp.Net MVC
- Advanced Controller and View Techniques
- MVC Dependency Injection
- Implementing Own Middleware Components
- Creating Full-Duplex Web Sockets Solutions
- MVC 6 Security
- Developing and Deploying Azure Solutions

Module 2: Advanced C#

1. Harnessing C# Language Features

- Language shortcuts
- Applying auto-implemented and lambda generated properties
- Benefiting from dynamic and implied-type declaration
- Streamlining program logic
- Instantiating entity objects
- Simplifying construction with object initializers

2. Employing Extension Methods for Middle-Tier Data Manipulation

- Filtering and ordering data with lambda expressions
- Passing lambda expressions to methods (behavior vs. data)
- Calling Count, Reverse, Union, Except and other extension methods
- Applying extended features
- Making code more flexible with delegates
- Parameterizing delegates and lambda expressions
- Streamlining code with Function <T, R> generic delegates

3. Leveraging LINQ Query Keywords

- Syntax and semantics
- Coding LINQ queries
- Filtering with from, where, order by and group
- Performing inner and outer joins
- Iterating collections
- Interfacing between C# and LINQ using IEnumerable <T> and IQueryable <T>
- Issuing queries on entity and spatial types

4. Attaching to Databases via the Entity Framework

- Connecting to and reading from a database
- Inheriting Core Db Context objects
- Correlating entity classes and data tables
- Executing stored procedures and table-valued functions
- Object Relational Mapping
- Employing code-first and database first mapping to generate entity classes
- Optimizing complex mapping including many to many and database inheritance
- Updating a database
- Inserting, updating and deleting data when Core is integrated with .NET Framework
- Error handling and exceptions
- Committing and rolling back transactions

Module 3: WCF [Windows Communication Foundation]

1. Introduction to Windows Communication Foundation (WCF)

- Introduction to Course Outline
- Evolution of WCF
- What is WCF?
- Overview of Different Types of Contracts in WCF
- Introduction to SOA
- Steps Involved in Developing, Hosting and Consuming a WCF Service

2. Developing a Simple WCF Service

- Creating a WCF Service Application
- Creating a WinForms Client for our WCF Service
- Overview of App.Config File

3. Developing and Hosting a WCF Service onto IIS

- Creating a Simple WCF Service Library

- Performing Web Hosting of our WCF Service
- Developing a Winforms Client for our WCF Service

4. Learn How to Self-Host a WCF Service

- Developing a WCF Service Library and Self Host Application
- Developing a Winforms Client for our WCF Service
- Testing the Winforms Client

5. Learn How to Self-Host Multiple WCF Services

- Developing Multiple WCF Libraries and a Single Self Host Application
- Developing and Testing a Winforms Client for our multiple WCF Services

6. Learn How to Self-Host a WCF Service Using Config Files

- Developing a WCF Service Library
- Working with App.Config
- Working with Configuration Editor
- Developing a Winforms Client for our WCF Service using a Configuration File

7. Learn How to Host a WCF Service Using Windows Services

- Developing a WCF Service Library
- Developing a Windows Service to Host Our WCF Service
- Developing a Winforms Client for our WCF Service

8. Learn How to Self -Host a WCF Service Using a Service Reference

- Developing a WCF Service Library
- Developing a Self-Host Application using a Service Reference
- Developing a Winforms Client for our WCF Service

9. Learn How to Host a WCF Service Using WAS

- Developing a WCF Service Library
- Install Required Roles and Features using Server Manager
- Develop a Web Host Service on IIS
- Working with AppCmd to Enable NetTcp Binding
- Developing a Winforms Client for our WCF Service

10. Learning Message Exchange Patterns in WCF

- Developing a WCF Service Library
- Implement One Way Methods in a WCF Service and Test
- Implement Duplex Methods in a WCF Service and Test - Part I
- Implement Duplex Methods in a WCF Service and Test - Part II

11. Learn How to Implement Exception Handling for WCF Services

- Throwing .NET CLR Errors from a WCF Service Method
- Throwing .NET CLR Errors from a WCF Service IsOneWay Method
- Throwing Fault Exceptions from a WCF Service
- Throwing Strongly Typed Fault Exceptions

12. Learn How to Implement Session Management in WCF Services

- Developing a WCF Service Library
- Working with PerSession InstanceContextMode
- Working with PerCall InstanceContextMode
- Working with Single InstanceContextMode

13. Learn How to Implement Transactions in WCF Services

- Developing a WCF Service Library with Transaction Support
- Developing a Web Host Application
- Developing a Winforms Client to Test out Transaction Support

14. Learn to Implement Session Management and Transactions together in WCF Services

- Developing a WCF Service Library with Sessions and Transactions Support
- Developing a Winforms Client for WCF Service to test Sessions and Transactions

15. Learn to Implement Session Concurrency in WCF Service

- Developing a WCF Service Library with Session Concurrency Support
- Developing a Host Application
- Developing a Winforms Client to test Session Concurrency Effect

Module 4: WPF [Windows Presentation Foundation Using C#]

1. Introduction to WPF (Windows Presentation Foundation Using C#)

- Why WPF?
- What Is WPF?
- .NET Framework 4.0 (WinFX)
- WPF Overview
- Application and Window
- A Simple WPF Application
- Using Visual Studio
- Brushes
- Panels

2. XAML

- Role of XAML
- Elements and Attributes
- Namespaces

- Property Elements
- Type Converters
- Content Property
- Collections
- XAML and Procedural Code

3. WPF Controls

- Button | Label | Text Box
- ToolTip | Radio Button | Checkbox
- List Box | Combo Box

4. Layout

- Sizing | Positioning | Transforms
- Canvas | Drawing Shapes
- Stack Panel | Wrap Panel | Dock Panel
- Grid | Scrolling | Scaling

5. Dialogs

- Message Boxes
- Win32 Common Dialogs
- Custom Modal Dialogs
- Custom Modeless Dialogs

6. Menus and Commands

- Menus | Context Menus
- Icons on Menu Items
- Commands
- Keyboard Shortcuts
- Disabling Menu Items | Checking Menu Items

7. Toolbars and Status Bars

- Toolbars | Toolbars and Commands
- Status Bars

8. Dependency Properties and Routed Events

- Dependency Properties
- Change Notification
- Property Value Inheritance
- Support for Multiple Providers
- Routed Events
- Routing Strategies

9. Resources

- Resources in WPF
- Binary Resources
- Logical Resources
- Static versus Dynamic Resources

10. Styles, Templates, Skins and Themes

- Styles | Style Sharing
- Triggers
- Templates

- Templated Parent's Properties
- Skins | Themes

11. Data Binding

- Binding Sources
- Sharing Sources with Data Context
- Data Templates
- Value Converters
- Collection Views | Data Providers

12. Validation Rules

13. WPF Training Course Objective

- Understand the WPF architecture and advantages
- Become proficient with the use of XAML
- Layout and containers in WPF
- Achieve reuse and maintainability with resources, styles, and templates
- Build compelling user experiences with custom drawing and animations
- Learn how to properly apply the MVVM design pattern via applications of increasing complexity
- Introduction to Windows 8 Applications

Module 5: Placement Guide

- What is an Interview?
- Tips to clear an Interview
- Common Interview questions and answers
- .NET Advanced Interview Questions and Answers
- Resume Building Guide
- Career roadmap and certifications
- Attempt for related Global Certification Exam, if any
- Start applying for Jobs