

.NET FRAMEWORK COURSE CURRICULAM

Basic Course:.Net/C#.Net/VB.Net

.NET Framework Overview-.NET Platform architecture - .NET Framework architecture overview - Common Language Runtime (CLR) - Assemblies and execution model - Common Type System (CTS) - Framework Class Library (FCL) - ADO.NET and XML - Windows Forms - ASP.NET Web Applications - ASP.NET Web Services.

Introduction to C#/Vb.Net language - Primitive data types - Enumerations - Expressions Statements - Control structures (if, for, while, do-while, foreach).

Object-oriented concepts in .NET - Classes and interfaces - Structs - Constructors, methods, fields, constants, access modifiers - Inheritance and polymorphism - Properties, indexers, operators - Static methods and constructors - Namespaces - Exceptions handling.

Delegates and events - Delegates and multicast delegates - Events

Arrays and collections - Arrays - Jagged vs. multidimensional arrays - Collections and enumerators - Lists, dictionaries, hash tables, sorted lists.

Working with strings - Strings, strings manipulation (StringBuilder), string formatting - Unicode, encodings, globalization and internationalization.

Regular expressions - Regular expressions language - Searching, extracting, validating and replacing text by regular expressions.

Memory and resource management - Managed heap and garbage collection - Destructors and finalizers.

Input/output - Streams, readers/writers - Files and directories - Asynchronous input/output.

Working with XML - Basic XML concepts (Well-formed XML, namespaces, DTD, XSD, XML parsers) - XML classes - DOM classes and XmlReader - XML validation - XPath and XSL Transformation classes.

Data access with ADO.NET - Basic concepts and classes (Connection, Command, DataReader, DataAdapter, CommandBuilder) - Data sets, data tables, relations, views, constraints - Strongly-typed data sets - Data sets and XML - Best practices using ADO.NET.

Windows Forms - Windows Forms programming model, basic classes (Component, Control, ScrollableControl, ContainerControl) - Forms and dialogs - Basic controls (Label, TextBox, Button) - Adding controls to forms - Handling events - Advanced controls (menus, status bars, toolbars) - Data binding and DataGrid - Custom controls.

ASP.NET and Web applications - ASP.NET programming model, Web Forms and Web controls, basic classes - Code behind pages - Page execution model - Web-application execution model - Basic Web controls - Handling events - Validations - State management - Data-bound controls, DataGrid and DataView - Custom controls.

Concurrency - Multithreading - Asynchronous execution - Synchronization - Classical synchronization problems.

.NET FRAMEWORK COURSE CURRICULAM

Reflection - Exploring metadata - Invoking methods.

Serialization - Automatic and custom serialization - XML and binary serialization.

Web services - Web services base concepts – request-response model, SOAP, UDDI and WSDL - Using Web services; Asynchronously invoking Web services - Creating Web services, exposing methods.

Remoting - Channels and Formatters - Activation and Deactivation - Object lifecycle -Activation models - Marshalling - Hosting remote objects - Using remote objects - Remoting configuration.

Interoperability and Unmanaged Code - Calling DLL functions - COM interoperability, COM wrappers.

Assemblies and deployment - Assemblies and metadata, assemblies versions, assemblies strong names, private and shared assemblies - Modules - Global Assembly Cache (GAC) - Portable executables.

Security - Code access security - Role based security - Signing assemblies.

Overview .Net 3.5 - WCF - WPF - AJAX - WF.

DESIGN PATTERNS - Creational Patterns (Abstract Factory, Builder, Factory Method, Prototype, Singleton) - Structural Patterns (Adapter, Bridge, Composite, Decorator, Façade, Flyweight, Proxy).

Advanced .Net Course

Microsoft .NET Compact Framework - .NET Compact Framework architecture - .NET Framework vs. .NET Compact Framework.

Foundation Class Library Overview - Send E-mail - Using System.Net Classes - Pattern Matching with RegEx - Efficient String Concatenation with the StringBuilder - Using the StringReader/StringWriter Classes - Dynamic Code Inspection with Reflection.

Advanced C# (2008/2010)/Vb.Net(2008/2010) language - Why do we need Generic - Templates and Generics - Generic Constraints - Generics and Casting - The default Keyword - What is Partial Class - Why do we need Partial Class - Static class definitions - C# nullable types (and the ? and ?? operators) - Delegate Covariance and Contravariance - Understanding Anonymous Methods - Understanding Method Group Conversion.

Reflection and Attribute Based Programming - The role of reflection and System.Type - Dynamic loading of external assemblies - The role of late binding - Understanding attribute based programming - Building custom attributes - Building extendable software .

Input, Output and Object Serialization - Survey the System.IO namespace - Learn to manipulate a directory and file structure - Open, read, write and close text files - The role of object serialization - The BinaryFormatter / SoapFormatter types.

.NET FRAMEWORK COURSE CURRICULAM

ASP .Net 3.5 Controls - key features of ASP.NET 3.5 - Understand the difference in Visual Studio 2008 with Web Sites and Web Application Projects - Know all the different controls and how to create custom controls - Know how to use the navigation controls, including breadcrumbs - Understand ASP.Net's provider model - Use ADO.NET with the latest ASP.NET Data controls - Use AJAX to dramatically improve Web performance and user experience - Know the basics of Silverlight and how it can be used .

Deployment - Copy, XCopy and RoboCopy a Web Site - Pre-compiling a Web site using aspnet_compiler.exe - Copying a Web site in Visual Studio - Publishing a Web site in Visual Studio - Building an ASP.NET Web deployment (*.msi) project.

LINQ: Language Integrated Query - LINQ's History and Motivation- LINQ Query Syntax- LINQ to Objects - LINQ to XML.

Introducing Federated Identity - Motivation - Claims-based applications - Security token services (STS) - Claims transformation - Federation.

Introducing WCF - Connected Systems - Distributed technologies - SOAP vs. REST designs - Service Orientation - Introducing WCF - Services and endpoints - Consuming WCF services - Security in WCF.

AJAX - Know the role of AJAX - AJAX in today - Understand the role of the XMLHttpRequest object - Learn about the ASP.NET Page Script Callbacks - Learn the ASP.NET AJAX controls - Learn the ASP.NET AJAX controls - Build a Web site using the ASP.NET AJAX Control Toolkit

Silverlight - Understand the role of Silverlight - Contrast the Silverlight 1.0 and 2.0 feature sets - Survey the Silverlight 2.0 architecture - Overview key Silverlight 2.0 development tools - Learn the core Silverlight assemblies and namespaces - Learn the role of the Application and UserControl classes - Learn the syntax of XAML

Windows Presentation Foundation - Introducing WPF - WPF Controls - WPF Document Controls - WPF Data Binding - WPF Templates and User Controls - WPF Navigation XBAPs .

Windows Work Flow - Introducing WF - Types of Workflow - Create WorkFlow Services.

WEB Design Patterns - MVC - MVP - Front Controller - Caching - Object.