# Course Content for .Net

## .NET FUNDAMENTALS

- Why .NET?
- The .NET initiative
- Introduction to .NET framework
- Advantages of .NET framework
- System requirements

## MS.NET FUNDAMENTALS

- Base class libraries
- Common language-runtime (CLR)
- Microsoft intermediate language (MSIL)
- Optimized just-in-time (JIT)
- Common type systems (CTS)
- Common language specification (CLS)
- Compilation and execution of .NET application
- Assemblies
- Namespace

## INTRODUCTION TO VISUAL STUDIO .NET

- The Start Page
- Solution Explorer
- The Object Browser and Class View Window
- The Code Editor
- The Form Designer and the Toolbox
- The Server Explorer window
- Macro Explorer
- Running a Visual Basic Console Application

## VB.NET

## INTRODUCTION TO VB.NET

- Features of visual basic .NET
- File extensions used in visual basic .NET
- Visual Basic keywords
- Visual Basic statements
- Procedures, classes, modules, methods and more…
- The Option & Import statements
- Adding classes to project
- Declaring variables
- Data types
- Arrays
- Handling date and time

## INTRODUCTION TO OOP

- Principles of oops
- Structure Vs classes
- Relationship between classes and objects
- Access Specifies
- How to create namespaces in S class libraries
- How to use namespaces
- Constructors
- Finalize, Dispose & Garbage collectors
- My Base, my class & my keywords

## EXCEPTION HANDLING & DEBUGGING

- Exceptions
- .NET exceptions
- User defined exceptions
- Try-catch-finally
- Throw exception
- Debugging application
- Searching for bugs

## GUI APPLICATION DEVELOPMENT

- Introduction to system windows, forms
- Basic controls and event driven programming
- Advanced controls
- Rich text box, toolbars
- Working with context menus
- Built in dialog boxes

## STEARMS

- File stream
- Stream reader
- Stream writer

## FILE HANDLING CONCEPTS COLLECTION

- Generic collections
- Bit collections
- Specialized collections
- Weight collection classes
- User defined collection classes

## ADO .NET

## INTRODUCTION OF ADO .NET

- Features of ADO .NET
- Differentiation between ADO & ADO .NET
- ADO .NET namespaces
- Properties, Methods & events of the connection object
- Properties, Methods & events of the command object
- Access & Manipulating data from data grid
- Performing data updates

## DELEGATES

- Introduction to delegate concept
- Event handling arch with delegate
- Handles, add handler and remove handler

## ASSEMBLIES

- Introduction to assemblies
- Benefits
- Contents
- Application-Private assemblies
- Private Vs shared assemblies
- Global assembly cache (GAC)

## MULTITHREADING

- Thread class
- Thread synchronization
- Creating and controlling threads
- Sleep, suspend and resume threading

## CREATING & USING WEB SERVICES

- Data accessing through crystal reports
- Accessing filtered data through crystal reports
- Accessing related data through crystal reports

## ASP .NET

## ASP .NET INTRODUCTION

- How is ASP .net different from ASP
- ASP .NET design goals
- ASP .NET in .NET framework
- Development environment for ASP .NET application
- Identifying the features of ASP .NET
- Identifying programming modules in ASP .NET
- Web forms
- Web services

## ASP .NET PROGRAMMING SERVER CONTROLS

- Processing of web pages
- Server control hierarchy
- Web controls
- Buttons, list controls, text boxes, hyper links….
- HTML controls
- HTML anchor, button…

## STRUCTURE OF AN ASP .NET PAGE ASP .NET PROGRAMMING VALIDATION CONTROLS

- Required field validation
- Regular expression
- Range validation…

## IDENTIFING THE DIFFERENT TYPES OF DATA BINDING

- Introduction to data binding
- Single value data binding
- Multi record data binding
- Custom binding

## ASP .NET PROGRAMMING WITH ADO .NET

- Introduction of ADO .NET
- Features of ADO .NET
- Differentiation between ADO & ADO .NET
- ADO .NET namespace
- Connected architecture through ADO .NET
- Disconnected architecture through ADO .NET
- Working with transaction in ASP .NET etc…

## USING XML & SEARCH TOOLS IN ASP .NET

- Working with XML server controls in ASP .NET
- Binding XML data to web forms controls
- Connecting relational data to an XML document

## CONFIGURING, DEBUGGING & DEPLOYING ASP .NET APPLICATION

- Configuration overview
- Structure of configuration file
- Configuration section
- Tracking and debugging an application
- Deploying an application

## EXCEPTIONAL HANDLING, MANAGING STATE AND SECURITY ASP .NET WEB APPLICATION

- Introduction state management in ASP.NET

- Sending E-mail from ASP.NET page
- Securing ASP .NET application

## SESSION TRACKING

- State maintenance
- Session state
- Cookies
- Session object and events
- CACHING
- Caching and its methods
- Output caching

## WEB SERVICES

- Introduction to an ASP .NET web application
- Events of an ASP .NET web application
- Using web services in web application

## C# .NET

## C# LANGUAGE BASICS

- Data types
- Type conversion
- Boxing & un boxing
- Conditional statements
- Looping
- Methods in C#
- Properties
- Arrays
- Indexes
- Structures, enumerations
- Strings
- Regular expressions
- Collections

## POINTERS

- Value types, reference types
- Unsafe
- Structure and pointers

## MEMORY MANAGEMENT

- Garbage collector
- Stack and heap
- Architecture of GC
- Generations
- M.M. support classes

**OBJECT ORIENTED PROGRAMMING CONCEPTS**

**EXCEPTION HANDLING**

- System defined exceptions
- Custom exceptions
- Try, catch, finally
- Throwing exceptions

**OPERATOR OVERLOADING**

- Unary operators
- Binary operators

**GUI APPLICATION PROGRAMMING**

- Introduction to system windows, forms
- Basic controls and events driven programming
- Advanced controls
- Rich text box, toolbars…
- Working with context menus
- Built in dialog boxes
- DATA BASE PROGRAMMING
- Introduction of ADO .NET
- Features of ADO .NET
- Differentiation between ADO & ADO .NET
- ADO .NET namespace
- Properties, methods & events of the connection objects
- Properties, methods % events of the command objects
- Access & manipulating data from data grid
- Performing data updates

**ASSEMBLIES**

- Introduction to Assemblies
- Benefits
- Contents
- Application-Private Assemblies
- Private vs Shared Assemblies
- Global Assembly Cache (GAC)

**DELEGATES AND EVENT HANDLING**

- Introduction to Delegate Concept
- Event handling Arch with Delegate
- Handles, Add Handler and Remove Handler
- Multi Cast Delegates
- Generic Routines
- Function Pointers

**MULTITHREADING**

- **Thread Class**
- **Thread Synchronization**
- **Creating and controlling Threads**
- **Sleep, Suspend and Resume Threading**

**CREATING & USING WEB SERVICES**

- **Introduction to Web Services**
- **Creating Web Service**
- **Using Web service in a Windows Application**
- **Working with Window Services**