Course Name: Certificate in Programming Excellence through ASP .NET
Eligibility: 10+2 with relevant Knowledge

Duration: 3 months, 150 hrs

Objective:

- To develop awareness, capability and confidence right from the beginning in the participant and to take up independent assignment in computer field using ASP.NET technology and to work as Web Developer.
- To provide the practical and theoretical knowledge in .NET programming language.
- To develop professional with the concept and technique in ASP. NET
- To make professional in ASP.NET programming

Module	Subject	Topics	Total Duration	Theory	Practical
B05-01	Programming Fundamentals of C#	**Fundamentals of C# basics**	25	10	15
B05-02	Introduction to Microsoft .NET Exploring Visual Studio .NET	**Introduction to Microsoft .NET**	65	35	30
B05-03	ASP .NET using VB .NET	**ASP .NET using VB .NET**	40	15	25
B05-04	Project Work: Development of Web Application using database	Project Work: Development of Web Application using database	20	--	20
	Total (Hrs)		150	60	90

DETAILED SYLLABUS

Subject Code	Subject	Syllabus	Theo.	Prac.
B05-01	**Programming Fundamentals of C#**	Overview of C# - Evolution of c#,features of c#,Benefits of changing over to c#,Differences between C++ and C#	1	1
		.NET Framework and platform - Overview of the .NET platform,.NET components,Common language Runtime. Introduction to C# - General structure of a C# program,The main method,Namespace declaration,Interactive Input/Output,Arguments in main method,command line arguments,runtime arguments	1	1
		C# Basics - Value types,default constructors,struct types, Struct modifiers,Struct interfaces, enumeration types,Enum modifiers, reference types,class types,object type,string type, interface types,delegate types, Delegates vs Interfaces,Boxing and unboxing,array types,variables and parameters, Operands, Statements,expressions, operators,Directives	1	1
		Classes - C# classes,Objects,creating classes,using an object's member functions,Static Methods and new operator,creating an object,different types of class members ,inheritance,Access specifiers(Private,Public,Protected,package),cleaning up unused objects,garbage collector,class library	1	2
		Methods – Structure of a method, Method overloading,implementing methods,Exception handling,Try and Catch	1	2
		Statements – Selection statements,Switch statement,Loops, jump statement, Break, continue, Goto, return statementAbstract and Base classes – Abstract modifier,abstract classes, virtual methods,base classes,introduction to .NET base classes.foreach statement	1	2
		Arrays and Strings – Array types based on dimensions,passing arrays as parameter,declaring array,initializing array,,creating array arrays as objects,System.Array type,Array members, array Covariance,array list, out and ref,String operations,converting objects to strings, String Builder, String formatting in .NET	2	2
		File handling – File and Folder operations, listing files in a folder, copying and deleting files, reading/writing text files and binary files	1	1
		Exceptions and error handling in C#- Common exception classes, statements(Try,Catch,Throw, Checked and Unchecked, Lock, Using,), Hierchical Structure of Exception, Passing Exception to Caller,user defined exception class, Types of Exception handlers, The Exception object,Error handling using Exceptions	1	2
		Total	**10**	**15**
B05-02	**Introduction to Microsoft .NET**	Introducing .NET: A Brief History of Windows Development, Components of a .NET Application, Migrating Existing Applications	01	
		.NET, ASP.NET, and Distributed Application Development:	03	

		The .NET Framework (What .NET Is, Web Services, .NET Framework Drilldown); Active Server Pages(ASP.NET Page Basics, Server Control Syntax, Code Basics, ASP.NET Page Life Cycle, Input Validation, Web Services, Improved ASP.NET page, Development, Improved ASP.NET Deployment, XML Configuration File, Security Infrastructure, Improved ASP.NET Availability and Performance); Distributed Application Architecture: Architecture and Design(The Core Of Distributed Applications, A Functional Overview Of Distributed Application, Designing Distributed Applications, Fundamental Application Boundaries: Presentation, Logic, and Data Services, Coupling, Multitiered Design, Local or Distributed?, Design Constraints, Design Goals).		
		The .NET Standards: Web Standards, Web Services Standards, Language and Infrastructure Standards	02	
		Visual Studio .NET: .NET and Visual Studio .NET, The Development Environment, Building a .NET Project	02	01
		Applications: The .NET Paradigms: Building Distributed .NET Applications, Data Access Layer, Business Object Layer, Web User Interface with ASP.NET, Desktop User Interface with Windows Forms	03	01
		.NET Exposed: .NET Framework, Deployment and Version Compatibility	01	
	Exploring Visual Studio .NET	Guided Tour of Visual Studio.NET: Creating Your First VS.NET Application, Investigating VS.NET Windows, Debugging in VS.NET, Using VS.NET Help	03	01
		Request Objects: Forms (Using a TextBox in a Form, Using a <SELECT> Tag in a Form, Using a Check Box in a Form, Using Radio Buttons in a Form, Using a TextArea in a Form, Using the Form Collection); Query String(Using Parameters, Parameters Spaces, QueryString Collections); Server Variables; Cookies; Other Request Objects.	02	01
		Response, Application, and Session Objects: Write; Redirect; Cookies; Write File; The Application Object (Application Event Handlers, Using Event Handlers to Determine, How Long Application Live, Using Application Variables, Storing Global Information, Using the Lock and Unlock Methods, Using Application Object Collections: Contents and StaticObjects); The Session Object (Session Event Handlers, Using Event Handlers to Determine, How Long Sessions Live, Using Session Variables).	02	02
		ASP.NET Controls: Intrinsic Control (Using the asp:TextEdit Control, Using the asp: CheckBox Control, Using the asp: RadioButton Control); List Controls (Using the Repeater Control, Using the DataList Control); Rich Controls(Calendar Control); Validation Controls.	02	02
		ADO.NET in ASP.NET: Overview; ADO.NET Name Spaces; Managed Providers(Connection, Command, DataReader, Parameter Binding with SQL Commands, Stored Procedures and Parameter Binding); The DataSet Object(DataAdapter, DataTable, DataViews, DataRelations); Error Handling; Database Transactions; Concurrent Database Access; ADO.NET Performance.	01	03
		Data Bound Controls: Repeater Control; DataList Control; DataGrid Control; The Data History Application.	01	01
		WebForms: Classic HTML and Server-Side Controls; HTML Controls; Web Controls; Intrinsic Web Controls, Intrinsic Web		02

		Controls; Buttons and Links; WebForms Examples(Shakespeare Program, Guessing Game, Temperature Calculator).	01	01
		Web Services: What is a Web Service? ; What Is SOAP? ; SOAP Packages; Why Is SOAP Important for Web Services? ; Why are Web Services Useful? ; Real World Scenarios for Using Web Services; Writing a Web Service; A Health tip Web Service; A Credit Card Validator Service; Consuming a Web Service.	02	02
		State Management: Using Application and Session Variables (Resource that application Variables Consume, Concurrency and Synchronization, Scalability Implications of Using Application Variables, Lifecycle Implication Of Using Application Variables) ; Hidden Fields; Synchronization; Global.asax; Session Information; Demo Application (Viewing the Session Variables, Viewing the Application Variables, Adding a Session Variables, Setting Application Variables).	01	02
		Investigating VB.NET Language Changes: Investigating Major Language Changes, Working with Classes, Object-Oriented Additions to VB.NET, Overloading, Overriding, Inheritance, and other New Techniques, Working Through a Simple, Object-Based Application	02	03
		Investigating .NET System Classes: Introduction to Namespaces, What's in the .NET System Class Libraries?, Investigating Some Example Classes Creating Windows Applications with Windows Forms: Creating an MDI Application in VS.NET, Working with Menus, Using Visual Inheritance, Adding New Controls, Working with Forms Programmatically, Creating Dialog Forms Handling Errors in VB.NET: Introduction to Structured Exception Handling, Catching Errors using Try/Catch, Handling Invariant Code Using Finally, Creating Your Own Exception Classes, System Exception Handling and debugging;	01	02
		Introduction to ADO.NET: What's Wrong with ADO?, Filling a DataTable Manually , Connecting to Data, Reading Data using the DataReader Object, Manipulating Data with the DataAdapter and DataSet Objects , Using DataRelation Objects to Relate Data, Updating Data and the CommandBuilder Object, ADO.NET and XML	02	02
		Getting Started with ASP.NET: Classic ASP vs. ASP.NET , Introduction to Web Forms , Controlling Page Layout , Targeting a Browser , Investigating Server Controls , Validating Data with Validation Controls , Data Binding with ASP.NET	01	02
		Creating Web Services: Introduction to Web Services , Creating a Simple Web Service , Investigating the WSDL, Creating Web Service Consumers , Handling Asynchronous vs. Synchronous Web Service Calls	01	01
		Creating Console Applications and Windows Services in .NET: Investigating Console Applications , Creating a Console Application , Debugging Console Applications , Investigating Windows Services , Creating a Simple Windows Service , Debugging Windows Services	01	01
			35	**30**
B05-03	**ASP .NET using VB .NET**	Introduction to ASP.NET: A Review of Classic ASP , ASP.NET Web Applications , Rendering HTML with Server Controls , Using ASP.NET to Deliver XML Web Services	02	01

		Working with Web Forms Controls: Introduction to Web Forms Controls , Simple Input Controls , HyperLinks and Button Controls , List Controls	01	02
		Validating User Input: Overview of ASP.NET Validation Controls , Using the Simple Validators, Using the Complex Validators, Summarizing Results with the Validation Summary Control	01	03
		Using Rich Server Controls: Introduction to Rich Controls , The Calendar Control , The AdRotator Control , The XML Control	01	03
		Accessing Data with ADO.NET: Overview of ADO.NET , Connecting to Data , Executing Commands , Working with Data , Choosing an ADO.NET Provider	01	03
		Using the DataList and Repeater Controls: Overview of List-Bound Controls , Creating a Repeater Control , Creating a DataList Control	01	03
		Working with the DataGrid Control: Introduction to the DataGrid , Setting Up the DataGrid , Using Advanced DataGrid Features , Adding Advanced Features	01	03
		Managing Data with ADO.NET DataSets: The Role of DataSets in ADO.NET , Using DataSets in ASP.NET , Saving DataSets in Session State , Using DataTable Constraints and DataSet DataRelations , Using DataSets with DataAdapters to Modify Data , The Transactional Model in DataSets	03	03
		Creating XML Web Services: The Motivation for XML Web Services , Creating an XML Web Service with Visual Studio .NET , Designing XML Web Services	02	02
		Consuming XML Web Services: Creating Web Services Clients , HTTP Clients , Creating .NET Consumers , Web Services and Legacy Clients , Discovering Web Services Using UDDI	02	02
			15	**25**
B05-04	Project Work	Development of Web Application using database	**---**	**20**
		TOTAL	**50**	**75**