Subject Name : ADVANCE .NET TECHNOLOGY

Subject Code : CE 605-2 / IT 605-2

Teaching Scheme (Credits and Hours)

Teaching scheme				Total Credit	Evaluation Scheme					
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.	Total
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	Marks
03	00	04	07	05	03	70	30	20	30	150

Learning Objectives:

The course will teach students the following skills:

- Programming using high-level abstractions such as classes, interfaces, namespaces, properties, delegates, events, threads, attributes, generics, and iterators
- Using the .NET platform to develop dynamic web pages with ASP.NET, Web Services, ADO .NET.
- It also covers the most important features of the class library (collections, IO, threading, sockets, Windows Forms, reflection, Xml, generics).
- Students will learn about the CLR (assemblies, versioning, security, JIT compilation, configuration) and about the most important .NET tools (VS.NET, ildasm, gacuti).
- Also covers the introduction about new features in Web development (WPF, WCF, WF, Silver light, Ajax Controls)
- Ability to compare the .NET platform with the Java technology.

Outline of the Course:

Sr. No	Title of the Unit	Minimum Hours
1	Introduction to .NET	2
2	Data Types and Base Class Libraries	2
3	Object Oriented Programming using VB.NET and C#	4
4	Windows Applications	8
5	Console Applications	1
6	ADO.NET	3
7	ASP.Net and Web Development	10
8	Advance Concepts	11
9	Dot Net Nuke	4

Total hours (Theory): 45

Total hours (Lab): 60

Total hours: 105

Detailed Syllabus

Sr. No	Topic	Lecture Hours	Weight age(%)
1	**Introduction to .NET** - Detailed .NET Framework architecture, Name spaces - Assemblies, Exploring Assemblies and Namespaces - Common Language Implementation , Metadata and Intermediate Language - Garbage Collection, Versioning and Side-by-Side Execution, The End to DLL Hell, Managed Execution, COM Inter Op	2	5
2	**Data Types and Base Class Libraries** - Understanding .NET Data Types - Stream and String Manipulation, Files and I/O, Collections - The Microsoft. Visual Basic Namespace	2	5
3	**Object Oriented Programming using VB.NET and C#** - Introduction to VB.NET and C#, Namespaces - Creating Classes, Classes and Inheritance, Overloading, Constructors and Destructors, Inheritance, Controlling scope and visibility, Dispose and Finalization, Modifiers, Properties and Indexers, Attributes, Reflection API ,Unsafe Code, Events and Delegates	4	9
4	**Windows Application:** - Language Features Creating .NET Projects, Namespaces, Threads, Debugging and Error Handling, Structured Error Handling - Windows Forms: Benefits, Windows Form Controls, Properties and Events, .NET Events, MDI Form, Visual Inheritance, Apply Inheritance techniques to Forms - Dialogs, ToolTips, Resizing , Menus, Custom control creation, Using ActiveX Controls, Printing, Handling Multiple Events, GDI+	8	17
5	**Console Applications** - When to use Console Applications - Generating Console Output , Processing Console Input	1	2
6	**ADO.NET** - Benefits of ADO.NET, ADO.NET compared to classic ADO, ADO .NET Objects Working with Data	3	7

		Sets, Managed Providers, Data Binding		
	-	Data Sets and XML, Typed Data Sets, Working with Data Reader		
7	**ASP.Net and Web Development**		10	22
	-	Introduction to ASP.NET, Difference between ASP and ASP .Net, Controls, Rich Server Controls, Web Site Administration Tool, Configuration Overview, Programming Configuration Files, Encrypting Configuration Sections, Database accessing, List-Bound Controls, Repeater Control, DataList Control		
	-	**State Management:** Preserving State in Web Applications, Page-Level State, Using Cookies, ASP.NET Session State, Storing Objects in Session State, Configuring Session State, an Out-of-Process State Server , Session State in SQL Server, Using Cookieless Session IDs, Application State		
	-	**Themes and Master Pages**: Consistent Web Site, CSS and Scene files, Master Pages: Content place holder and Nested Master page.		
	-	**Web Services:** XML Web Services, Creating and Designing an XML Web Service, Creating Web Service Consumers, Discovering Web Services Using UDDI		
8	**Advanced Concepts**		11	24
	-	**WPF:** Introduction, create WPF application, Windows Client .NET, WPF programming model features (XAML, Layout, Dependency Properties, Styling and Templating), WPF Features (Controls, Data Binding, Input, Graphics and Multimedia, Security)		
	-	**WCF** : Framework, WCF Address, WCF Binding, Wshttp, Basic http, Nettcp, netPeertcp,Msmq, WCF Contract, Service Contract, Operaton Contract, Data Contract, Service Hosting, IIS Hosting, Local host (Service Host), Broadcasting, Messaging, Data Base Servicing, WCFtestclient tool, Svcconfigeditor tool, Svcutil Tool		
	-	**WF:** Introduction, choosing right WF tool, WF4, Binding first WF		
	-	**SilverLight:** Framework , Component's, Control & Component Events, Styles and Templates, Working with Data, Silverlight enabled Web services, Data Binding & Events, Integration With ASP.NET		
	-	**Ajax Controls:** AJAX and need for AJAX**,** Implement with JavaScript, ASP.NET AJAX – Update Panel, Update Progress etc.**,** ASP.NET Ajax Control toolkit, Client side Template Rendering – Data View control		
9	**Dot Net Nuke**		4	9
	-	Introduction, Modules, skins, frameworks		
		Total	**45**	**100**

Instructional Method and Pedagogy:

- At the start of course, the course delivery pattern, prerequisite of the subject will be   discussed.
- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lecture and laboratory which carries 10 marks in overall evaluation.
- One internal exam will be conducted as a part of internal theory evaluation.
- Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.
- Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five marks in the overall internal evaluation.
- The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures.
- Experiments shall be performed in the laboratory related to course contents.

Learning Outcome:

- Able to apply the principles of object-oriented programming.
- Write clear and effective C# code.
- Create applications using Microsoft Windows® Forms
- Working with XML Documents
- Using Crystal Reports
- Access data using ADO.NET
- Develop web applications using ASP.NET Web Forms.
- Develop and use ASP.NET Web Services.
- Create a rich GUI for web based applications using a rich set of controls
- Create secure (authentication and authorization) web applications
- Personalize a web page using Web Parts
- Create asynchronous web applications using ASP.NET AJAX
- Create and use web services
- Deploy web applications

Reference Books:

1. Professional VB. NET, Wrox publication
2. C# 2012 programming, covers .net 4.5, black book, KOGENT learning solutions inc., Dreamtech Pub.
3. Advance .Net Technology, Chirag Patel, Dreamtech
4. Publication ASP .NET complete reference, TMH
5. ASP.NET 2.0, Black Book, Dreamtech
6. ASP.NET 4, Unleashed – Stephen Walther, Kevin Hoffman, Nate Dudek, Pearson
7. Professional C# .Net, Wrox publication

List of experiments:

Sr. No	Name of Experiment
1	Write a program for Arithmetic Calculator using Windows Application.
2	Implement Windows Form based application using controls like menus, dialog and tool tip, dropdown, radio and selection button etc.
3	Implement Master Form with Windows application.
4	Implement Overloading and Overriding, constructor and Destructor.
5	Write a program for events and Delegates.
6	Implement concepts of Inheritance, visual inheritance and Interface in windows application.
7	Implement printing of GDI+ with windows application.
8	Use Dataset, Data Reader, XML Reader & Data Sources (SQL, Object & XML) with Any Windows or Web Application.
9	Use Data Controls like Data List, Grid View, Detail View, Repeater and List Bound Control
10	Implement web application using ASP.NET with web controls.
11	Write a code for web application to provide input validations using Input Valuators.
12	Create a Web application that illustrates the use of themes and master pages with Site-Map.
13	Create a Web Application in ASP.NET using various CSS
14	Implement the concept of state management in a web application.
15	Implement code in ASP.NET that creates and consumes Web service by any web application.
16	Create the simple application to demonstrate the WPF concept.
17	Create the simple application to demonstrate the WCF concept.
18	Create the simple application to demonstrate the WF concept.
19	Create the simple to demonstrate the Silverlight concept.
20	Create the simple to demonstrate the AJAX concept using AJAX toolkit.