GUJARAT TECHNOLOGICAL UNIVERSITY

COMPUTER ENGINEERING (07) AND INFORMATION TECHNOLOGY (16)
DOT NET TECHNOLOGY
SUBJECT CODE:2160711
B.E. 6thSEMESTER

Type of course: Elective

Prerequisite: Concepts of Object oriented programming approach

Rationale: Object oriented programming has gain momentum because of the object reuse. .NET provides object oriented development framework. .NET provides a base class library that supports innovative web development. It enables to fulfill varied functions like graphic rendering and file reading. It has all the resources to provide websites with different functionality and manage it smoothly at the same time. .NET provides Consistent programming model, Direct Support for Security, Simplified Development efforts and Easy application deployment and Maintenance.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P	C	Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
					PA	ALA	ESE	OEP		
4	0	2	6	70	20	10	20	10	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	**Introduction to .NET Framework:** NET framework, MSIL, CLR, CLS, CTS, Namespaces, Assemblies The Common Language Implementation, Assemblies, Garbage Collection, The End to DLL Hell - Managed Execution	2	7%
2	**C# - The Basics and Console Applications in C#:** Name Spaces - Constructor and Destructors, Function Overloading & Inheritance, Operator Overloading, Modifiers - Property and Indexers , Attributes & Reflection API, When to use Console Applications - Generating Console Output, Processing Console Input	4	14
3	**C#.NET:** Language Features and Creating .NET Projects, Namespaces Classes and Inheritance -, Namespaces Classes and Inheritance -, C, Exploring the Base Class Library -, Debugging and Error Handling -, Data Types -, Exploring Assemblies and Namespaces, String Manipulation ,Files and I/O ,Collections	2	7
4	**ADO.NET:** Benefits of ADO.NET, ADO.NET compared to classic ADO -, Datasets, Managed Providers -, Data Binding: Introducing Data Source Controls -, Reading and Write Data Using the SqlDataSource Control	3	12
5	**Windows Forms and Controls in details:** The Windows Forms Model, Creating Windows Forms Windows Forms Properties and Events, Windows Form Controls, Menus - Dialogs – ToolTips	2	7

6	**Visual Inheritance in C#.NET:** Apply Inheritance techniques to Forms, Creating Base Forms, Programming Derived Forms	2	7
7	**Mastering Windows Forms:** Printing - Handling Multiple Events, GDI+, Creating Windows Forms Controls	3	12
8	**ASP.NET:** Introduction to ASP.NET, Working with Web and HTML Controls, Using Rich Server Controls, Login controls, Overview of ASP.NETValidation Controls, Using the Simple Validations, Using the Complex Validators Accessing Data using ADO.NET, Using the Complex Validators Accessing Data using ADO.NET, Configuration Overview	3	12
9	**Themes and Master Pages:** Creating a Consistent Web Site, ASP.NET 2.0 Themes - Master Pages, Displaying Data with the GridView Control Introducing the GridView Control, Filter Data in the GridView Control, Allow Users to Select from a DropDownList in the Grid, Add a Hyperlink to the Grid, Deleting a Row and Handling Errors	2	7
10	**Managing State:** Preserving State in Web Applications and Page-Level State, Using Cookies to Preserve State, ASP.NET Session State ,Storing Objects in Session State, Configuring Session State, Setting Up an Out-of-Process State Server, Storing Session State in SQL Server, Using Cookieless Session IDs, Application State Using the DataList and Repeater Controls, Overview of List-Bound Controls, Creating a Repeater Control and DataList Control	3	12
11	**Creating and Consuming Web Services:** The Motivation for XML Web Services, Creating an XML Web Service with Visual Studio, Designing XML Web Services, Creating Web Service Consumers, Discovering Web Services Using UDDI	2	2
12	**Advanced in .NET:** Introduction to Windows Presentation Foundation (WPF), Window Communication Foundation and its Application	2	1

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15	**20**	**35**	**00**	**00**	**00**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Christian Nagel, Professional C# .Net, Wrox Publication
2. Matthew Macdonald and Robert Standefer, ASP.NET Complete Reference,   TMH
3. Vijay Mukhi, C# The Basics, BPB Publications

Course Outcome:

After learning the course the students should be able to:

1. Use .net framework architecture, various tools, and Validation techniques, use of different templates available in Visual Studio, Implementation and testing strategies in real time applications.
2. Use advanced concepts related to Web Services, WCF, and WPF in project development

List of Experiments:

1) Write a program to check whether empty query string is entered in Asp .net
2) Write a program to change color of Label text control programmatically in Asp .Net
3) Write a program to Enable-Disable Textbox and change width of TextBox programmatically in Asp .Net
4) Write a program to increase and decrease font size programmatically.
5) Write C# code to display the asterisk pattern as shown below:
   *****
   *****
   *****
   *****
   *****

6) Write C# code to prompt a user to input his/her name and country name and then the output will be shown as an example below:

   Hello Ram from country India!

7) Write C# code to do the following

   - Convert binary to decimal
   - Convert decimal to hexadecimal
   - Convert decimal to binary
   - Convert decimal to octal

8) Write C# code to convert infix notation to postfix notation.
9) Write a C# code to convert digits to words
10) Write a C# code to Convert following currency conversion.

   Rupees to dollar, frank, euro.

11) Write a C# code to Perform Celsius to Fahrenheit Conversion and Fahrenheit to Celsius conversion.
12) Write ASP.Net program to Store Objects in Session State and Storing Session State in SQL Server.

Design based Problems (DP)/Open Ended Problem:

1) Design and develop a tool that inspects every web request.
2) Develop a powerful cross platform game.

Major Equipment:

Desktop, Laptop

List of Open Source Software/learning website:

www.c-sharpcorner.com
www.csharp-station.com/Tutorial.aspx

ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.