CVM UNIVERSITY
Aegis: Charutar Vidya Mandal (Estd.1945)

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2020-21

Programme: **Bachelor of Engineering (Information Technology)**

Semester: **V**

Course Code: **102045604**

Course Title: **.Net Technology**

Course Group: **Professional Elective Course - I**

Course Objectives: .NET is a revolutionary software framework created by Microsoft for developing computer programs. It provides consistent programming model, direct support for security, simplified development efforts and easy operation deployment and conservation. This course will enable students to understand Microsoft .NET framework architecture and provide them necessary skills to implement standalone and web based applications in .NET technology.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
				Theory		J/V/P*		Total
Lecture	Tutorial	Practical		Internal	External	Internal	External	
3	0	2	4	40 / 14	60 / 21	20 / 07	30 / 10	150 / 52

* **J**: Jury; **V**: Viva; **P**: Practical

Detailed Syllabus:

Sr.	Contents	Hours
1	**Introduction To .Net Architecture:** Introduction to .NET Framework Architecture, Program Execution in .NET, CLR structure, Assemblies, Creating strong named assemblies, putting DLL in GAC, Garbage Collection, DLL Hell, Side by Side Execution, Debugging.	04
2	**Object Oriented Programming in C#:** Creating Class, Declaring variables and methods, Access modifiers, Constructors, Abstract Class, Partial Class, Inheritance, Method overloading, method overriding, Anonymous method, Properties, Indexers, Exception Handling.	06
3	**Building GUI with C# and Database Connectivity using ADO.NET:** GUI: Working with C# windows applications, Working with common form controls, Visual Inheritance, Creating MDI Form, Event handling. ADO.NET: Overview of ADO.NET framework, working with SQLserver database, Managed Provider, Dataset, working with data source, Connected and disconnected architecture, Binding data with Datagrid, Binding data with Crystal Report.	08
4	**Web and ASP.NET Controls:** Web Server, HTTP/HTTPS Protocol, ASP.NET Benefits, ASP.NET Page Layout, Life Cycle, HTML Server Controls, Web Server Controls, Validation Controls, Introduction to AJAX.	07

5	**Master page, Theme and State Management, Web service:** Master page and theme, Different methods to preserve state in ASP.NET, Creating and consuming web service.	**05**
6	**Getting Started with ASP.NET MVC:** What is MVC Architecture? What is ASP.NET MVC? Learning Model, View, Controller. Advantages of MVC. Application configuration files.	**06**
7	**Basics of Cloud Computing**: The cloud, cloud computing, and the cloud optimized stack, Microsoft Azure C# library to create a storage container, ASP.NET web application that uses the storage container.	**04**
	Total	**40**

List of Practicals / Tutorials:

1	Implement Overloading and Overriding, constructor and Destructor in C#.
2	Write a program for Arithmetic Calculator using Windows Application.
3	Implement Windows Form based application using controls like menus, dialog and tool tip, dropdown, radio and selection button etc.
4	Implement concepts of Inheritance, visual inheritance and Interface in widows form application.
5	Use Dataset, Data Reader, XML Reader & Data Sources (SQL, Object & XML) with Any Windows or Web Application.
6	Use Data Controls like Data List, Grid View, Detail View, Repeater and List Bound Control.
7	Implement web application using ASP.NET with web controls with validation controls.
8	Create a Web application that illustrates the use of themes and master pages with Site-Map.
9	Implement the concept of state management in a web application.
10	Implement code in ASP.NET that creates and consumes Web service by any web application.
11	Implement MVC based ASP.NET web application.
12	Create Microsoft Azure storage container and ASP.NET application to consume it.
13	Create a mini project (Desktop/Web based).

Reference Books:

1	Professional C# .Net, Christian Nagel, Wrox Publication
2	ASP.NET Complete Reference, Matthew Macdonald and Robert Standefer, TMH
3	C# The Basics, Vijay Mukhi, BPB Publications
4	Beginning C# and .NET, Benjamin Perkins & Jon D. Reid, Wrox publication.

Supplementary learning Material:

1	Microsoft Developer Network (MSDN)
2	GitHub Repository: https://github.com/microsoft/dotnet https://github.com/kgrzybek/modular-monolith-with-ddd

Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz

- Continuous assessment
- Interactive methods
- Seminar/Poster Presentation
- Industrial/ Field visits
- Course Projects

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						**R**: Remembering; **U**: Understanding; **A**: Applying; **N**: Analyzing; **E**: Evaluating; **C**: Creating
R	**U**	**A**	**N**	**E**	**C**	
15%	20%	20%	15%	15%	15%	

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.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	Understand C# and the .NET framework namespace contents.	**15**
CO-2	Able to implement the console and GUI applications using C# .Net.	**20**
CO-3	Synthesize various navigation techniques for integrating web pages within the site.	**20**
CO-4	Demonstrate the design of dynamic web page using ASP.NET Controls which interact with databases.	**30**
CO-5	Construct and implement cookies and sessions as state management techniques and create a basic cloud-based application.	**15**

Curriculum Revision:	
Version:	1.0
Drafted on (Month-Year):	June-2020
Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	June-2025