Marwadi University

Syllabus for Bachelor of Technology

Computer Engineering

Subject Code: 01CE0523
Subject Name: .NET Technologies
B.Tech. Year – III

Objective: Net Technologies are blend of technologies supported by Microsoft .Net Framework that allows user to create various applications. Students will be able to work with various technologies provided by Microsoft .NET platform.

Credits Earned: 4 Credits

Course Outcomes: After completion of this course, student will be able to

- To Review the components of .Net Framework [Understand]
- To practice Web based application [Apply]
- To create web applications using MVC framework [Create]
- To practice basic database application using ADO.net [Apply]
- To designing, developing, and deploying APIs [Apply]

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Internal (I)	Viva (V)	Term work (TW)	
3	0	2	4	50	30	20	25	25	150

Contents:

Unit	Topics	Contact Hours
1	**Introduction to .Net Framework and C#:** Introduction to .NET Framework Architecture, CLR, Assemblies, Basics of C#, Class, Object, Method, Access Modifiers, Constructors, Abstract Class, Inheritance, Interface, Polymorphism, Exception Handling	8
2	**ASP.Net Web Application:** Page life cycle of ASP.NET Application, Web Controls (Button, TextBox, CheckBox, Image etc.), Rich Controls (Calendar, AdRotator), Validation Controls, State management, Cookie, Session	8
3	**ASP.Net MVC:** Introduction to ASP.NET MVC, MVC Architecture Overview, Controllers, Razor Views, LayoutView, PartialView, Models, HTML helpers, Action Filters, Model Validation, URLs and Routing	9
4	**Working with ADO.Net:**	9

	ADO.Net Architecture, Characteristics of ADO.Net, Data Namespaces, ADO.Net Object Model, DataSet, DataTable, DataRelation, Connection object, Command Object, Data Reader Object, DataAdapter Object, Data Controls (Repeater, DataList, DataGrid), Binding data with Crystal Report, Performing CRUD operations	
5	**ASP.Net Web API and Security** Introduction, Understanding HTTP methods, Creating API controller, API configuration, Routing, Parameter binding, request and response, API filters, Form Based Security, Windows based security	8
	Total Hours	**42**

References:

1. ASP.NET Complete Reference, Matthew Macdonald and Robert Standefer, TMH
2. Professional ASP.NET 4 in C# and VB (WROX)
3. Pro ASP.Net in C# 2010, Macdonald and Mathew, Apress Publication
4. Professional C# .Net, Christian Nagel, Wrox Publication
5. The Complete Reference C# by Herbert Shildt, Mcgrow Hill Publication

Suggested Theory distribution:

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
10 %	20%	40%	0%	0%	30%

Suggested List of Experiments:

Sr.No.	Topics	Contact Hours
1	Practical-1: Program on Class, Object and Constructor	2
2	Practical-2: Program on Inheritance and Interface	2
3	Practical-3: Program on Polymorphism and Exception Handling	2
4	Practical-4: Create web application using ASP.Net Web Controls	2
5	Practical-5: Create web application using ASP.Net Rich Controls	2
6	Practical-6: Create web application using ASP.Net Validation Controls	2
7	Practical-7: Program on Session and Cookie	2
8	Practical-8: Creating web application using MVC	4
9	Practical-9: Create web application that performs CRUD operation using ADO.Net	4
10	Practical-10: Create Web application which use Data Controls	2

	like Repeater, DataList, DataGrid	
11	Practical-11: Program for Creating and using APIs	4

Instructional Method:

a) The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.
b) The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
c) Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
d) Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.

Supplementary Resources:

a) https://dotnet.microsoft.com/en-us/learn/aspnet
b) http://www.c-sharpcorner.com
c) http://www.codeproject.com
d) http://www.csharphelp.com/index.html