Syllabus of Diploma Engineering

Computer Engineering

Semester-VI

Subject Name: .NET

Subject Code: 09CE1603

Objective: .NET is programming language. Its main objective is to learn the .NET framework and its runtime environment as well as basic features of object oriented C# language and advance features. Also learning connectivity with ADO.Net and C#.

Credits Earned: 2 Credits

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

- Understand the basic architecture of .NET framework.
- Describe C# concepts with OOP elements
- Implement the concepts of class, object, constructor and inheritance concepts in C#.
- Understand different windows tool to implement windows application
- Develop web application and describe advance features of C#.

Pre-requisite of course: Concepts of Object Oriented Programming

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
0	0	4	2	00	30	20	25	25	100

Unit	Topics	Contact Hours
1	**Introduction of .NET** Basics of .NET Framework, Common Language Runtime, Microsoft Intermediate Language, Common Language Specification, Managed and Unmanaged Code, Metadata, Assemblies, Namespaces, Garbage Collection, creating different types of indexers and properties.	2

2	**Fundamental of C# .NET** Evaluation of C#, data types, variables, literals, Operators, Program Control Statements: if, switch, Loop: Entry Control, Exit Control loop, goto statement.	2
3	**Console Application of C#** Basics of Class and objects, Reference variable, Constructors and types of constructors, Destructor calling in class, Overloading concept, Function and Operator Overloading, Inheritance and types of Inheritance, Attributes and API reflection, Declaring and Dereferencing pointers	3
4	**Exception Handling and I/O** **Exception Handling:** Introduction, try, catch, exception, multiple catch blocks, nested try block. **I/O:** Byte stream and character stream, Console I/O, File Stream and Byte-Oriented File I/O, Events and Delegates.	3
5	**ASP.NET Introduction** Application of ASP.NET, Web Controls : Basic Web Controls, Web control Classes, Simple web page applet, Validation and Rich Controls: Simple validation example, understand regular expression, validate customer form	4
6	**ADO. NET and advance .NET Concepts** Introduction of ADO and ADO.NET, characteristics of ADO.NET, Dataset, Different types of Data Binding: Single Value, Repeated Value, Data Binding with Database, Data List, Data Grid and Repeater. **Advance .NET Concept:** Introduction of Windows Presentation and Communication Foundation and use	4
	Total Hours	**18**

References:

1. Herbert Schildt, “The Complete Reference C# 2.0”, Tata McGraw Hill.
2. Imar Spaanjaars, “Beginning ASP.NET in C# “, Wiley India Wrox Publication.
3. Andrew Troelsen, “Pro C# 2010 and the .NET 4 Platform”, Apress Publication, 5th Edition.

4. Mathew MacDonald, "The Complete Reference ASP.NET", Tata McGraw Hill.
5. Advance .NET Technology, Dreamtech Publication.

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
35%	35%	30%	0%	0%	0%

Suggested List of Experiments:

Sr. No.	Unit No.	Name of Topics	Contact Hours
1	1	Install .NET framework and packages also trouble shoot.	2
2	2	Write a C# code to print Hello World and elaborate each statement.	1
3	2	Write a C# code to convert temperature from Fahrenheit to Centigrade.	1
4	2	Write a C# code to check given number is Prime or not.	1
5	2	Write a C# code to check given string is Palindrome or not.	1
6	2	Write a C# code to find out Vowels and Consonant of string.	1
7	2	Write a C# code to demonstrate the concept of if else ladder and switch statement.	1
8	2	Write a C# code to generate Fibonacci series of N numbers.	1
9	2	Write a C# code to find out factorial of given number.	1
10	2	Write a C# code to generate following pattern: (i) 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5 (ii) A A B AB C A B C D A B C D E (iii) 5 4 3 2 1 5 43 2 5 4 3 5 4 5 (iv) 1 A B 1 2 3 ABCD 12345	2
11	3	Write a C# code to convert prefix notation to postfix notation.	2
12	3	Write a C# code to convert infix notation to prefix notation.	1
13	3	Write a Menu Driven C# code to perform following operations.	1

		Convert Binary to Decimal Convert Decimal to Binary Convert Hexadecimal to Octal Convert Octal to Decimal	
14	3	Write a C# code to generate PASCAL Pyramid.	1
15	3	Write a C# code to multiply two values by using the concept of parametised constructor.	1
16	3	Write a C# code to demonstrate the concept of operator overloading.	1
17	3	Write a C# code to add two values by using the concept of function overloading.	1
18	3	Write a C# code to demonstrate the concept of Multiple inheritances.	1
19	3	Write a C# code to demonstrate the concept of multilevel inheritance.	1
20	3	Write a C# code to demonstrate the concept of hybrid inheritance.	1
21	4	Write a C# code to demonstrate the concept of exception handling.	1
22	4	Write a C# code to demonstrate the concept of multiple catch blocks.	1
23	4	Write a C# code to demonstrate the concept of nested catch block.	1
24	4	Write a C# code to perform file operations.	1
25	5	Write a C# code to create Form Base Windows Application.	1
26	5	Write a ASP.NET code to test input box and message box.	1
27	5	Write a ASP.NET code to test check box and radio button and click event.	1
28	5	Write a ASP.NET code to provide Required Field Validation and Control Field Validation.	1
29	5	Write a ASP.NET code to provide Range Validation and Custom Field Validation.	1
30	6	Write a program to provide connectivity with ADO.NET for adding, searching, editing, deleting as bound mode.	2
31	6	Write a program to provide connectivity with ADO.NET for adding, searching, editing, deleting as unbound mode.	2
32	6	Develop one mini application by using C# and ADO.NET.	2

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:

1. https://www.tutorialspoint.com/csharp/
2. https://www.w3schools.com/asp/webpages_examples.asp
3. https://www.codeproject.com/
4. http://c-sharpcorner.org
5. https://msdn.microsoft.com/