MCA I Semester 2

Subject Name: .NET Programming with C#-Practical **Subject Code:** MTCA23204

Type of course: Professional Core Course

Prerequisite (if any):
- Concepts of Object Oriented Programming Approach

List of Courses where this course will be prerequisite:
- ASP.NET Core Development, .NET Technologies

Rationale: .NET Programming will help students to understand the basic concepts of .Net framework and importance of various coding techniques. This course also helps students understand the role of CLR. The students will be able to follow a particular programming methodology with .NET Framework for application development.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks		Practical Marks		Total
L	T	P	C	TEE	CAT	TEP	CAP	
0	0	4	2	-	-	30	20	50

CAT: Continuous Assessment Theory comprised of CA1 and CA2 **CA1:** Continuous Assessment (assignments/projects/open book tests/closed book tests **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CAP:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in courses.

List of Practical:

Sr. No	Particulars
1	Write a console application that obtains two int values from the user and displays the a. ADD b. SUBTRACT c. MULTIPLY d. DIVISION e. MOD
2	Write programs using conditional statements and loops: I) Generate Fibonacci series. II) Generate various patterns (triangles, diamond and other patterns) with numbers. III) Test for prime numbers
3	Write a console application to add two matrices.
4	Write code to get a calculator to validate and add numbers.
5	Write a program to declare class "Distance" have data members' dist1, dist2, dist3. Initialize the two data members using constructor and store their addition in the third data member using function and display addition.
6	Define a class "salary" which will contain member variables Basic, TA, DA, HRA. Write a program using Constructor with default values for DA and HRA and calculate the salary of the employee.
7	Demonstrate Event Handling
8	Demonstrate Delegates
9	Demonstrate Exception Handling
10	Demonstrate Inheritance and Polymorphism
11	Demonstrate Windows form with different Controls like Layout, Labels, TextBoxes and Buttons, GroupBoxes and Panels, CheckBoxes and RadioButtons, ToolTips, Mouse-Event Handling, Keyboard-Event Handling. Menus, MonthCalendorControl, DateTimePicker Control, LinkLabel Control, ListBox

	Control, CheckedListBoxControl, ComboBox Control, TreeView Control, ListView Control, TabControl Control and Multiple Document Interface (MDI) Windows.
12	Demonstrate the use of ADO.NET Object model.
13	Create ASP.NET application for login and registration using session and cookies.
14	Demonstrate web applications with AJAX.

Suggested Specification table with Marks (Practical):

%Distribution of Marks					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
25	25	50	0	0	0

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:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	.NET 4.0 Programming (6-in-1) (Black Book)	Kogent Learning Solutions Inc.	Dreamtech Press ISBN: 9789350040430	2011	1st edition
2	C# 2010 for Programmers	Paul Deitel and Harvey Deitel	Prentice Hall ISBN: 0132618206	2010	4th edition
3	Pro C# 5.0 and the .NET 4.5 Framework	Andrew Trolsen	Wiely-Appress	2012	6th edition

Course Outcomes:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	Utilize the .NET Framework to create applications that exemplify the architecture and core components of .NET technology.	19
CO-2	Apply fundamental concepts of C# programming, including namespaces, command-line arguments, and interactive inputs.	10
CO-3	Demonstrate the core programming concepts in C# language, with a deep understanding of Object-Oriented Programming (OOP) principles.	14
CO-4	Demonstrate the fundamental concepts of Delegates and Exception Handling.	10
CO-5	Develop Windows-based applications using event-driven programming concepts in the .NET environment.	10
CO-6	Implement database connectivity using ADO.NET and effectively manage runtime errors through advanced exception-handling techniques.	14
CO-7	Develop Web-based applications using validations controls and AJAX concepts	23

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13
CO-1	3	3	0	1	3	0	0	0	2	0	0	3	0
CO-2	3	3	0	1	3	0	0	0	2	0	0	3	0
CO-3	3	3	0	1	3	0	0	0	2	0	0	3	0
CO-4	3	3	0	1	3	0	3	0	2	0	0	3	0
CO-5	3	3	0	1	3	0	3	0	2	0	0	3	0
CO-6	3	3	1	1	3	0	0	0	1	0	0	3	0
CO-7	3	3	0	1	3	0	3	0	2	0	0	3	0

Rationale*: Explaining why it is matching this particular program outcome