



SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Master of Computer Applications



Integrated MCA II Semester 4

Subject Name: .NET Programming with C#

Subject Code: IMCA13403

Type of course: Professional Core Course

Prerequisite (if any): -

- Concepts of Object Oriented Programming Approach

List of Courses where this course will be prerequisite:

- .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 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	
3	0	0	3	60	40	-	-	100

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 course





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Content:

Sr. No.	Content	Teaching Hrs.	Module Weightage
1	Introduction to .Net Framework .NET Framework 4.0, Benefits of .NET Framework, Architecture of .NET Framework 4.0, Components of .NET Framework 4.0: CLR, CTS, Metadata and Assemblies, .NET Framework Class Library, Windows Forms, ASP .NET and ASP .NET AJAX, ADO .NET, LINQ. What is Strong Name, Strong-named assemblies, How to sign an assembly with a strong name.	5	12%
2	Overview of C# Simple C# program, Namespaces, Comments, Command line arguments, Main with a class, Interactive input. Literals, Variables and Data Types, Operators and Expressions, Decision making and branching, Decision making and Looping. Methods in C# and Handling Arrays. Manipulating Strings: Creating strings, string methods, inserting strings, comparing strings, mutable strings, and arrays of strings.	8	18%
3	Object Oriented Programming Creating Classes, Object Construction & Destruction, Properties and Methods. Access Specifiers: Public, Private, Protected, Protected, Friend, Me, MyBase and MyClass keywords Abstraction, Encapsulation & Polymorphism Interfaces & Inheritance Exception Handling Checked and Unchecked Statements, Throwing Exceptions, Builtin Exceptions, Handling Exceptions, Chaining Catch Blocks, Finally, Re-throwing Exceptions, Custom Exceptions.	8	18%
4	Windows Application Event-driven program model. Windows Forms, Control Properties and Layout, Labels, TextBoxes and Buttons, GroupBoxes and Panels, CheckBoxes and RadioButtons, ToolTips, Mouse-Event Handling, Keyboard-Event Handling. Menus, MonthCalendarControl, DateTimePicker Control, LinkLabel Control, ListBox Control, CheckedListBoxControl, ComboBox Control, TreeView Control,	12	26%





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	ListView Control, TabControl Control and Multiple Document Interface (MDI) Windows.		
5	Database Connectivity Introduction of ADO.net, advantages of ADO.net, managed Providers, Developing simple ADO.net based application, Creation of Data table, Retrieving data from Tables, Table Update, Disconnected data Access through Dataset object.	12	26%

Suggested Specification table with Marks (Theory):

%Distribution of Marks					
R Level	U Level	A Level	N Level	E Level	C Level
34	26	24	16	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.





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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-in1) (Black Book)	Kogent Learning Solutions Inc	Dreamtech Press ISBN: 978935004 0430	2011	1 st edition
2	Pro C# 5.0 and the .NET 4.5 Framework	Andrew Trolsen	WielyAppress	2012	6 th edition
3	Programming In C#	E Balagurusamy	McGraw Hill Education	2017	4 th edition
4	C# 4.0 The Complete Reference	Herbert Schildt	Osborne/McGra w-Hill	2010	1 st edition

Course Outcomes:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % Weightage
CO-1	Understand the origins and architecture of .NET technology, including its key components and the .NET Framework	12
CO-2	Apply the fundamental concepts of C# programming, including namespaces, command-line arguments, and interactive inputs	18
CO-3	Demonstrate the core programming concepts in C# language, with a deep understanding of Object-Oriented Programming (OOP) principles	18
CO-4	Develop Windows-based applications using event-driven programming concepts in the .NET environment	26
CO-5	Implement database connectivity using ADO.NET and effectively manage runtime errors through advanced exception-handling techniques	26





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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
Rationale*													

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

List of Open learning website:

<https://dotnettutorials.net/>

<https://gitconnected.com/learn/c-sharp>

List of Open-Source Software:

<https://code.visualstudio.com/>

Major Equipment Needed: NA

