



SYLLABUS

Course Title	Windows Application Development using C#
Course Code	BCA511
Course Credit	Theory(Hrs) : 4
	Practical(Hrs) : 4
	Tutorial(Hrs) : 0
	Credits : 6

Course Objectives

The objectives of course are:

- To apply the techniques and features of C# language and .NET framework to construct a moderately complex windows application
- To perform asynchronous operations to improve response time and throughput of application
- To understand the issues, tradeoffs, and decision points in developing, integration, and managing windows applications

Detailed Syllabus

Sr. No.	Name of chapter & details	Hours Allotted
Section – I		
1	Introduction to .NET Framework The .NET Framework - an Overview, .NET Framework Architecture, Features and Versions of Framework, Overview of different types of applications development using MS.NET .NET Framework Components MS.NET Base Class Library(BCL), Managed/Unmanaged Code, Intermediate Language, Common Type System, Common Language Runtime, Common Language Specification, Assemblies, Metadata, Namespaces, Just In Time Compilation and its type, Garbage Collection	06

2	<p>Language Basics and Console application Development Introduction to Project and Solution in Studio, Exploring the IDE of VS.NET, Introduction to C# .Net language, Declaring main() Method, Organizing Libraries with Namespaces, 'using' Keyword, Console Application Development, Compiling and Executing using command line and IDE, Comments</p> <p>Literals, variables and data types – literals, variables, data types, value types, reference type, declaration of variables, initialization of variables, default values, constant variables, scope of variables, boxing and unboxing, Check and Uncheck block.</p> <p>Operators, Decision making and branching, Decision making and looping, Arrays, Structures and enumeration</p> <p>Methods in C# – declaring methods, the main method, invoking methods, nesting of methods, methods parameters, pass by value, pass by reference, the output parameters, variable arguments list, method overloading</p> <p>String handling – creating strings, comparing strings, finding substrings, mutable strings, arrays of strings</p>	08
3	<p>Class and Inheritance Class and Object – Basic principles of OOP, class, objects, constructors, static members, constructors, types of constructors, destructors, member initialization, 'this' reference, nesting of classes, constant members, read only members, access specifiers</p> <p>Inheritance and polymorphism – Inheritance, types of inheritance, overloading methods and operators, overriding methods, hiding methods, abstract class, abstract method, sealed class and Interface</p>	06
4	<p>Advanced Concepts of C# Creating and using Property, Indexer, delegates and events, Collections: Basics of Collection, ArrayList, Stack, Queue, SortedList Exception Handling – Overview of Exception, Exception classes and its important properties, Understanding & using try, catch, finally and throw keywords, nested try statements, multiple catch statements</p>	08
Section – II		
5	<p>Windows Programming Introduction, Exploring the IDE of VS.NET, Basic Introduction to Form and properties, MessageBox class with all types of Show() method, SDI and MDI Applications, Controls - General Controls, Container Controls, Menu and Tool Bars, Data Controls, Dialog boxes</p>	12
6	<p>Data Access using ADO.NET Evolution of ADO.NET, ADO .NET Architecture, ADO.NET Connected and Disconnected Models, Data Providers in ADO.NET, Connection Object, Building the Connection String, Understanding DataReader, DataSet, DataAdapter, DataTable, DataColumn, DataRow,</p>	10

	DataRelation, and DataView, Data Binding and GridView Programming	
7	Designing Reports and Deploying Application Importance of Report, Creating Reports, Different types of Reports, Report Sections, Using report in application, object formatting, Formula, Special Field and Summary in Report, Types of Setup Projects, Creating Setup Project.	06

Instructional Method and Pedagogy:

- Lectures will be conducted on the basis of Classroom Response Systems with the use of multimedia projector and black board.
- Assignments based on course contents will be given at the end of each unit/topic and will be evaluated at regular interval.
- Experiments will be based on the practical curriculum and will be evaluated at regular interval.
- Students will be guided to develop the real-world applications with the advanced concepts of application development.

Course Learning Outcomes:

On the completion of the course, students will be able to:

- **Utilize** the Microsoft Visual Studio development environment to create a windows application
- **Understand** the basics of object oriented programming
- **Recognize** the idea of CLR and .NET framework
- **Engrave** clear and effective C# code for the given problem
- **Use** Microsoft ADO.NET and inbuilt data tools for accessing data in windows application
- **Use** the trace and debug utility that are provided with Visual Studio .NET Develop, configure and deploy windows application

Text books:

- Title : Programming in C#, Tata McGraw-Hill
Author(s): E Balagurusamy
- Title : Professional crystal reports for visual studio .Net, 2nd edition, Wrox
Author(s): David Mcamis

Reference Books:

- Title : Visual Studio .Net Programming Black Book, Dreamtech press
Author(s): Kogent Learning Solutions Inc.
- Title : Professional C#, Wrox Publication
Author(s): Christian Nagel, Bill Evjen, Jay Glynn, Karli Watson, Morgan Skinner
- Title : Crystal Reports 10: The Complete Reference, Tata McGraw-Hill
Author(s): George Peck

Additional Resources

- msdn.microsoft.com
- www.completecsharp tutorial.com
- www.codeproject.com
- www.stackoverflow.com
- www.dotnet spider.com
- www.tutorialspoint.com
- www.w3schools.com
- www.c-sharpcorner.com
- www.learnvisualstudio.net