CS – 20
Programming with C#

Unit : 1
.NET Framework & Visual Studio IDE, Language Basics

- Introduction to .NET Framework
- Features / Advantages
- CLR, CTS and CLS
- BCL / FCL / Namespaces
- Assembly and Metadata
- JIT and types
- Managed Code and Unmanaged Code
- Introduction to .NET Framework and IDE versions
- Different components (windows) of IDE
- Types of Projects in IDE (Console, Windows, Web, Setup, etc.)
- Data Types (Value Type & Reference Type)
- Boxing and UnBoxing
- Operators (Arithmetic, Relational, Bitwise, etc.)
- Arrays (One Dimensional, Rectangular, Jagged)
- Decisions (If types and switch case)
- Loops (for, while, do..while, foreach)

Unit : 2
Class and Inheritance, Property, Pointers, Delegates, Event, Collections

- Concept of Class, Object, Encapsulation, Inheritance, Polymorphism
- Creating Class and Objects
- Methods with "ref" and "out" parameters
- Static and Non-Static Members
- Constructors
- Overloading Constructor, Method and Operator
- Inheritance
- Sealed Class & Abstract Class
- Overriding Methods
- Interface inheritance
- Creating and using Property
- Creating Pointer (Unsafe Code)
- Creating and using Delegates (Single / Multicasting)
- Creating and using Events with Event Delegate
- Collections (ArrayList, HashTable, Stack, Queue, SortedList) and their differences.

Unit : 3
Windows Programming

- Creating windows Application
- MessageBox With DialogResult class
- Basic Introduction to Form and properties
- Concept of adding various Events with event parameters
- Different Windows Controls
  - Button, Label, TextBox, RadioButton, CheckBox, ComboBox, ListBox, PictureBox, ScrollBar, TreeView, Menu (MenuStrip, ContextMenuStrip), TolpStrip, Timer, Panel and GroupBox
- Dialog Boxes (ColorDialog, FontDialog, SaveFileDialog and OpenFileDialog)
- MDI Concept with MDI Notepad (RichTextBox)

Unit: 4
Database Programming with ADO.NET

- Concept of Connected and Disconnected Architecture
- ADO.NET Architecture
- Data Providers in ADO.NET
- Connection Object
- Connected Architecture
  - Command, DataReader
- Disconnected Architecture
  - DataAdapter , DataSet , DataTable , DataRow , DataColumn , DataRelation , DataView
- Data Binding
- GridView Programming

Unit: 5
User Controls (Components), Crystal Reports, Setup Project

- Creating User Control with
  - Property, Method, Event
- Using User Control in Windows, Projects as component,
- Creating Crystal Reports
- Types of Reports
- Report Sections
- Formula, Special Field and Summary in Report
- Types of Setup Projects
  - Creating Setup Project
  - File System Editor
  - User Interface Editor
  - Launch Conditions Editor

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	**60**	**05**	**05**	**05**	**75**

Reference Books:

1) Pro C# 5.0 and .NET 4.5 Framework (By: Andrew Troelsen)
2) Head First C# - (By: Jennifer Greene, Andrew Stellman)
3) C# 5.0 Unleashed - (By: Bart De Smet)
4) Adaptive Code Via C# (By: Gary McLean Hall)
5) C#.NET Programming Black Book - steven holzner –dreamtech publications
6) Introduction to .NET framework - Wrox publication
7) Microsoft ADO. Net - Rebecca M. Riordan, Microsoft Press

Reference Website

https://www.tutorialspoint.com/csharp

https://www.tutorialsteacher.com/csharp/csharp-tutorials

https://www.javatpoint.com/c-sharp-tutorial