<u>**ELECTIVE I**</u>

Course No: MCA-4EL1
Course Title: Windows Programming using C#

Unit I

Introduction to windows Programming. .Net Architecture , The relationship of C# to .net , The Common Language Runtime , Advantages of Managed Code. A Closer Look at Intermediate Language , Support for Object orientation and Interfaces , Distinct Values and Reference types , Strong Data Typing , Error handling and Exceptions , Use of Attributes , Assemblies , Private Assemblies , Shared Assemblies , Reflection , .net framework classes , namespaces , creating .net applications using C# , Creating windows forms , windows controls , windows services , The role of C# in the .net enterprise architecture. The .net Environment , Working with visual studio 2005 , Assemblies , .net Security , Localization , Deployment.

Unit II

C# Basics , variables , predefined data types : Value types and reference types , CTS types ,Conditional statements ,loops , jump statements , Enumerations , Arrays , Using statement , Namespace , Aliases , The Main() Method , Multiple Main Methods , Passing Arguments to main() . More on compiling C# files , console I/O , Using Comments , The C# preprocessor directives. C# Programming Guidelines. Objects and Type : Classes and Structs , Partial classes , static classes , The object class Inheritance : Types of inheritance , virtual methods , hiding methods , calling base versions of functions , sealed classes and methods , constructors of derived classes , modifiers , interfaces , derived interfaces.

Unit III

Operators and Casts : Operator shortcuts , The ternary operator , The checked and unchecked operators , The is operator , The as operator , The sizeof operator , The typeof operator , Nullable types and operators , The Null coalescing operator , operator precedence , Type safety, Type conversions , Boxing and unboxing , comparing objects for equality , Operator overloading , User defined casts. Delegates and Events , Memory management and Pointers , Strings and regular expressions , Collections , Array Lists , The Stack , Queue , SortedList class, Hash Tables and Dictionaries ,

Unit IV

Generics , Generic collection classes ,Error and Exception Handling , Threading , Applications with multiple threads , Manipulating Threads , Creating Threads with Thread pool. Data Access with .net : Ado.net overview , Using Database Connections , Executing commands , Fast Access , The Data Reader , Managing data and relationship : The Dataset Class , XML schemas , Populating a Dataset , Persisting Dataset Changes , Working with ADO.net , windows forms , viewing .net data.

Reference:

Text Book : Professional C# 2005 by Christian Nagel , Bill Evgen , Jay Glynn Wrox Publications , 2006.
Dietel&Dietel , "C# , How to Program",Pearson Education.
Visual C#.Net by John Sharp & John Jagger, PHI, New Delhi.
Visual Studio .Net by Francisco, Microsoft Publication.