# DOT NET

**Audience:**

Any IT professionals / BE / B. Tech / MCA / BCA / or equivalent graduate student who wants to build .Net technology skills.

**Duration:**

5 days

**Charges** – INR 9K plus ST

**Course Outline:**

1. **Windows DNA**
   - Windows DNA and its related problems
   - .NET Solution

2. **.NET Framework Architecture**
   - Framework Elements
   - Application Domains

3. **Elements of CLR**
   - JITer
   - Garbage Collector
   - Class loader
   - Security Manager
   - Type Verifier

4. **Compilation Process**
   - Compilation process in .NET
   - .NET Application Execution Process
   - .NET Assemblies

5. **Type System**
   - Understanding .NET Type system
   - Common Type System
   - Value types and Reference types

6. **Common Language Specification**
   - CLS compliance across .NET languages

7. **.NET Namespaces**
   - Significance of Namespaces in .NET
   - Understanding Namespaces

- Namespace extended across assemblies
- Multiple Namespaces within an assembly
- Nesting Namespaces

**8.    .NET Framework Features**
- Boxing and Unboxing
- Checked / UnChecked
- params Keyword
- out, ref keyword
- const and readonly keyword
- static members
- functions and constructor

**9.    Object Oriented Features**
- Encapsulation
- Object type
- Defining Properties
- Read write
- Read-only
- Write only
- Accessibility levels
- Defining Methods
- Using access modifiers
- Initializations and cleanup using Constructors, Destructors
- Importance of IDisposable
- Static and instance members
- Inheritance and Polymorphism
- Invoking base class functionality from derived class
- Defining virtual functions and overriding them
- Abstract classes and methods
- Sealed classes and methods
- Hiding base class members
- Partial Class
- Static classes

**10.    Delegates**
- Need for callbacks in an application
- Introducing Delegates
- Multicast delegates
- Anonymous methods
- Delegate inferring

**11.    Events**
- Notifications using events
- .NET Events instances of delegates

- Events and inheritance
- Register and Un-register event

**12. Exception Management**
- Understanding exceptions
- Handling exceptions
- Exception class
- User defined exceptions

**13. Debugging**
- Visual Studio .NET debugging environment
- Using debugging tools provided by the IDE
- Local Window
- Watch window
- Breakpoints
- Call stack

**14. Interfaces**
- Defining Interfaces in .NET
- Implementing interfaces
- Providing interface specific implementation
- Querying for a supported interface

**15. Collection Classes**
- What are collection classes
- .NET Collection Types
- Name-Value pair Collections

**16. Generics**
- Method with Generics
- Class with Generics
- Constraints on generic methods and classes
- Delegate with Generics

**17. Iterators**
- Creating Iterators for a class
- Iterators with Generics and Non Generics class
- Using Interfaces IEnumerable, Ienumerator

**18. Nullable Data Types**
- Value types that hold Null values
- INullable generic type
- Using the shortcut to declare nullable types

### 19.  Assemblies
- Private and Shared Assemblies
- Creating Strong-named assemblies
- Global Assembly Cache
- Single file assemblies and Multi file assemblies
- .NET modules
- Understanding the assembly contents using ILDASM

### 20.  Windows Form Applications
- Using windows controls to the form
- Registering event handlers for control events
- Anonymous Methods
- ToolStrip Control
- Anchor Styles
- Docking Styles
- Using Layout to design the Window
- FlowLayout Panel
- TableLayout Panel
- Visual inheritance

### 21.  Reflection
- Using Reflection for RTTI
- Using Reflection for RTOC
- Accessing assembly metadata
- Accessing type metadata

### 22.  File I/O
- Using the different stream classes in .NET
- BinaryReader/Writer
- StreamReader/Writer
- FileInfo/DirectoryInfo

### 23.  Serialization
- Persisting object to a stream
- Serialization and inherited classes
- Serialization modes
- Binary
- SOAP
- XML
- Customizing Serialization by
- Using attributes
- Implementing ISerializable interface

**The training package would consist of class room sessions, presentation and reading materials.**