# **Duration: 4 weeks**

 **Certificate Course in .Net Programing**

### **Target Audience**

This course is intended for anyone who is new to software development and wants, or needs, to gain an understanding of programming fundamentals and object-oriented programming concepts. They will typically be high school students, post-secondary school students, or career changers, with no prior programming experience. They might want to gain an understanding of the core programming fundamentals before moving on to more advanced courses such as 20483B: Programming in C#.

### **Course Objectives**

•Explain core programming fundamentals such as computer storage and processing.

•Explain computer number systems such as binary.

•Create and use variables and constants in programs.

•Explain how to create and use functions in a program. •Create and use decisions structures in a computer program.

•Create and use repetition (loops) in a computer program. •Explain pseudocode and its role in programming.

 •Explain the basic computer data structures such as arrays, lists, stacks, and queues. •Implement object-oriented programming concepts.

•Create and use classes in a computer program. •Implement encapsulation, inheritance, and polymorphism.

•Describe the base class library (BCL) in the .NET Framework.

•Explain the application security concepts.

•Implement simple I/O in a computer program.

•Identify application errors and explain how to debug an application and handle errors.

•Identify the performance considerations for applications.

**Course Outline for ASP.NET**

**INTRO TO WEB TECHNOLOGIES**

ü  HTML

ü  Client side scripting langs

ü  llS Architecture

**ASP.NET INTRODUCTION**

ü  What is ASP.NET

ü  Image Technique and code behind technique

**SERVER SIDE CONTROLS**

ü  Type of server controls

ü  Examples on Web server controls

ü  Validation Controls

ü  ASP.NET Page Execution Architecture

**THEME AND SKIN STATE MANAGEMENT**

ü  Cookies

ü  Session State

ü  Session Tracking Arch

ü  Application object

ü  Session and App events

ü  Global. AJAX

ü  Viewstate

**ADO.NET**

ü  Intro to ADO.NET Providers

ü  Data Reader

ü  Dataset

ü  Datalist

ü  Repeater

ü  Datasource Controls

ü  Gride view

ü  Details view

ü  List view

**LINQ CACHING**

ü  Importance of Caching-

ü  ASP 4.5 Support for Caching

ü  Type of Caching in ASP.NET

ü  Output Caching

ü  Web user control(VS) custom control

ü  Fragment caching

ü  Data caching vs Application object

**ASP.NET CONFIGURATION**

ü  Machine config vs Web config

ü  App Settings

ü  Compilation setting

ü  Custom error setting

ü  Session State Setting

ü  Enhancement in ASP.NET

ü  Inprocess VS out process session state

ü  State server and SQL Server

ü  Cookie less session

**ASP.NET TRACING**

ü  Page Level

ü  Application Level

**E-mail Server SECURITY IN ASP.NET**

ü  Authentication & Authorization

ü  Windows Based Authentication

ü  Form Based Authentication

ü  Passport Authentication

ü  Membership

**XML WEB SERVICES**

ü  Intro to Web Services

ü  Role of WSDL .NET support for XML Web Service

ü  Client Apps for Web Service

ü  Caching Web Service

ü  SOAP

ü  UDDI Registry

**WCF MASTER PAGES SITE NAVIGATION WEB PARTS**

ü  Web part manager

ü  Zone Types

**C#.NET / VB.NET**

**.NET ENTERPRISE ARCHITECTURE 4.5**

ü  Introduction to the .NET platform

ü  Common Language Run Time (CLR)

ü  The Common Type Specification (CTS)

ü  The Common Language Specifications (CLS)

ü  Microsoft Intermediate Language (MSIL)

**C#.NET Language Basics**

ü  Data Types -Type Conversion

ü  Boxing & Unboxing

ü  Conditional Statements

ü  Looping

ü  Methods in C#

ü  Properties

ü  Arrays

ü  Indexers

ü  Structures, Enumerations

ü  Strings

ü  Collections

**Objects Oriented Programming**

ü  Oops Concepts

ü  Encapsulation

ü  Inheritance

ü  Polymorphism

ü  Class and Object

ü  Constructors

ü  Dynamic types

ü  Optional parameters

ü  Names & optional arguments

ü  Covariant generic type parameters

ü  Destructors

ü  Method overloading

ü  Method overriding

ü  Early binding, Late Binding

ü  Abstract Classes

ü  Abstract Methods

ü  Interfaces

ü  Multiple Inheritance

ü  Generic classes

ü  Static classes

ü  Static constructors

ü  Object initializer

ü  Collection Initializer

ü  Extension Methods

ü  Partial Classes & Methods

**Memory Management**

ü  Garbage Collector

ü  Stack.and Heap

ü  System. GC Class

ü  System. Object Class

ü  Architecture of Gc

**Exception Handling**

ü  System Defined Exceptions

ü  Custom Exceptions

ü  Try, Catch, Finally

ü  Throwing exceptions

**Operator Overloading GUI Application Development**

ü  Windows forms and Controls

ü  Creating Menus

ü  Toolbars, Image List

ü  Tree view, List view

ü  Notify Icon

ü  Error Provider

**Data Base Programming (ADO.NET)**

ü  ADO .NET Introduction

ü  Data Providers in .Net

ü  Introduction to Managed and Unmanaged Providers

ü  Data Readers- Dataset and Data Adapters

ü  Datagrid View with DML operations sorting and paging etc.

ü  Creating Relations and Transactions

ü  Linq programming

ü  Stored procedures

**ASSEMBLIES**

ü  Private Assemblies

ü  Shared Assemblies

ü  Global Assembly Cache (GAG)

**Delegates**

ü  Function Pointers

ü  Multi cast delegates

**User Controls and Event Handling**

ü  User Defined Control

ü  Inherited Control

ü  Event handling

**Pointers**

ü  Value types, Reference types

ü  Unsafe Structures and Pointers

**Distributed Technologies & .NET Remoting**

ü  Distributed architecture

ü  DCOM, RMI, CORBA

ü  Channels (TCP HTTP)         Marshal by Value

ü  Marshal by Reference

ü  Server Activated

ü  Client Activated

ü  Remoting Architecture

**File Handling**

ü  System .IO namespace

ü  File stream

ü  Stream Reader

ü  Stream writer

ü  Fileinfo

ü  Directory info

**Windows Services**

ü  Service base class

ü  Service Process installer

ü  Service Installer

ü  Creating a Windows Service

ü  Installutill .exe

**Multi threading**

ü  Threading

ü  Thread synchronization

ü  Critical sections

ü  Thread life cycle

**Security in .NET**

ü  Cryptography

ü  Role based security VB.NET

**INTRADUCTION TO VB.Net**

ü  Features of VB.NET

ü  Writing Programs in VB.Net

ü  Compiling and executing form Command Prompt

ü  Intro to Assemblies and Namespace

ü  Base class Libraries

ü  Data types

ü  Boxing and unBoxing

ü  Array

ü  Sub Programs

**VB.NET and C# Comparison**

ü  Program structure

ü  Comments

ü  Data Types

ü  Constants

ü  Enumerations

ü  Operators

ü  Choices

ü  Loops

ü  Arrays

ü  Functions

ü  Strings

ü  Regular Expressions

ü  Exceptions Handling

ü  Classes/Interfaces

ü  Contructors/Destructors

ü  Using Objects

ü  Structs

ü  Properties

**CRYSTAL REPORTS**

**LOCALIZATION AND GLOBALIZATION**

ü  Resource file creation

ü  Satelite Assembly Creation

ü  Creating Globalization App and Localization App

**WPF Programming**

ü   Shapes

ü  Transformation

ü   Animation