

Core ASP.NET (C# Programming)

Session 1: Introduction to .NET Framework

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| ✓ Introduction to .NET Framework | ✓ Difference between .NET 2.0, 3.5 and 4.0/4.5 |
| ✓ .NET Framework Overview, Development in .NET Framework 4.5 | ✓ Objectives of .NET Framework 4.5, Components of .NET Framework 4.5 |

Session 2: Inside .NET Framework & Assembly

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| ✓ Execution Process in .NET Environment | ✓ Inside .NET Framework |
| ✓ CLR, Managed and Unmanaged Code | ✓ MSIL, CTS, MetaData, Jitters |
| ✓ Assemblies – The Building Blocks | ✓ Assembly Benefits, Assembly Contents |

Session 3: Introduction to C# Programming

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| ✓ Need of C#, Strengths of C#, C# Basics | ✓ Program Structure, Data Types, Variables, Constants, Operators, Flow Control in C# |
| ✓ Operators, Type Safety, Object Comparison | ✓ Operator Overloading, User Defined cast |

Session 4: Namespaces and Assemblies

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| ✓ Namespaces and Assemblies | ✓ Arrays: Simple, Multidimensional and Jagged Array, Array Class |
| ✓ Enumerations, Properties and Indexes | ✓ Preprocessors, Preprocessor Usage |

Session 5: Preprocessor and Delegates

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| ✓ Conditional Compilation, Assemblies: What are Manifests?, Writing Private Assemblies | ✓ Writing Shared Assemblies, Delegates and Events
Boxing and Unboxing, Reflection and Type class |
| ✓ Regular Expression, Attributes | ✓ Collections: Collection Interface, List, Queue |
| ✓ Stack, Dictionaries, Hashset etc. | ✓ HashMap, Set, Map interfaces |

Session 6: Exceptional Handling

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| ✓ Error Handling (Exceptions Handling), Checked & Unchecked Statements, The try, catch, finally | ✓ Do's and Don'ts of Exception Handling, User Defined Exception classes |
| ✓ Win Forms, Control class, Standard Control and Component | ✓ Creating User Controls and Windows Forms Controls in Depths |

Session 7: OOPS Implementation

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| ✓ Encapsulation, Abstraction, Class and Object, Relation b/w objects and reference variables | ✓ Method Overloading & Types of Methods, Description of Memory blocks: Stack, Heap |
| ✓ Class Area, Constructor, Destructor | ✓ Garbage Collection, Using Scope and Dispose |

Session 8: OOPS Implementation continue ...

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| ✓ Usage of this keyword, Static data members, Constructor & methods, Relation & Implementing Has-A relation | ✓ Implementing IS-A relation using Inheritance, Method Overriding & Hiding, Usage of Base keyword, Static and Dynamic Binding |
| ✓ Runtime Polymorphism and generalization, Abstract classes and methods | ✓ Interfaces and Role based Inheritances, Usage of sealed, partial, out, ref, param keyword |

Session 9: String Handling

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| ✓ String class & concept of Immutability | ✓ Pool of String Constants & its use |
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✓ Common String operations	✓ Use of StringBuilder and String Handling Methods
Session 10: MultiThreading in .NET	
✓ Multitasking and Multithreading, Process	✓ Thread and States of Thread
✓ Thread based execution model of .NET Apps	✓ Implementing User threads, Thread Synchronization, Inter Thread Communication
✓ Thread Interrupting	✓ Daemon Threads and their use
Session 11: Input Output Streams and Reflections	
✓ Streams & their advantages over conventional input output, Reading & Writing data byte by byte	✓ Reading and Writing line by line, and in one go
✓ Redirecting Standard Input and Output Streams	✓ Serialization and Deserialization, File class and File System Interaction, Zip and Unzip files
✓ Understanding object representation of classes, Loading classes dynamically	✓ Instantiating classes indirectly, Obtaining information of classes dynamically, Invoking methods indirectly
✓ Referencing data members indirectly	✓ Overriding access policy and referencing private members