

Course title: Object-Oriented Programming with C# and .NET Framework**Duration: 80 hours, 40 lessons****Prerequisite: Programming fundamentals course****OOP Programming**

1. Methods and parameter modifiers
2. Methods overloading, default parameter
3. class, constructor, memory allocation
4. this keyword
5. Encapsulation
6. Access modifiers
7. Properties, getter and setter
8. static keyword
9. readonly and const keywords
10. Exception Handling
11. Nested types
12. Inheritance
13. Polymorphism
14. virtual and override keywords
15. Object, Boxing and Unboxing
16. Abstract class
17. Interface

Advanced Programming

1. Operator Overloading, Indexer Methods, Extension Methods
2. Generic Programming
3. Reflection, Attributes
4. IEnumerable and IEnumerator Interfaces
5. Delegates, Events, Lambda Expressions
6. LINQ fundamentals
7. IDisposable Pattern, GC
8. Threading fundamentals
9. TPL, async, await

Algorithms and Data Structures

1. Measuring Performance
2. Linked List
3. Stack
4. Queue
5. Binary Trees
6. Hash Tables
7. Sorting Algorithms