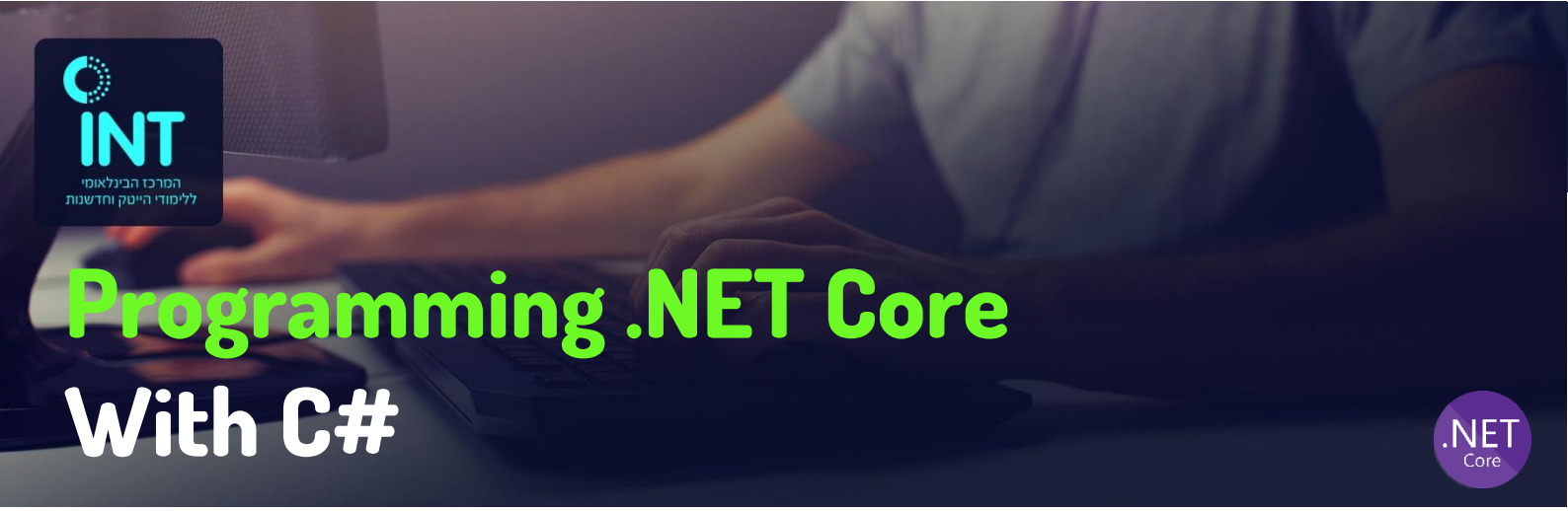

Programming .NET Core With C#

The .NET Framework is the most widely used framework in the Microsoft space for most applications, client and server alike. With .NET Core, .NET can now target various platforms from Windows, Linux and Mac, and all the way to mobile and IoT devices. With C#, a new and modern object-oriented language, .NET is elegant, fast and productive. This course focuses on the foundations of .NET and C#, using the most common features and the Base Class Library (BCL). The course provides hands on labs for students to enhance the learning experience and provides a solid foundation for actual projects. Best practices are emphasized throughout the course.

You Must Know!

Duration:
40 Hours

Who should attend?
Experienced Developers

Prerequisites:
Object oriented knowledge, Experience with C++ or Java is an advantage

Main Topics:

- What is .NET?
- C# Language Fundamentals
- Types
- Inheritance and polymorphism
- Exceptions
- Delegates & Events
- Namespaces and assemblies
- Threading

Course Modules

Module 1 – Introduction to .NET Core and C#

- What is .NET?
- The Common Language Runtime (CLR)
- The Common Type System (CTS)
- Introduction to C#
- Namespace and Assemblies basics
- Viewing metadata with ILDasm and Reflector
- Introduction to Visual Studio and Visual Studio Code
- Creating a simple C# Console Application
- .NET version Overview – from .NET 1.0 to .NET 4.* and .NET Core
- .NET Standard

Module 2 – C# Language Fundamentals

- Procedures and Statements
- Data Types
- Declaring Variables
- The "*var*"keyword
- Assignments
- Conversions
- Arithmetic and Other Operators
- Control Constructs

Module 3 – Types

- Type Concepts
- Value Types vs. Reference Types
- Fields, Properties and Methods
- Method Overloading
- Default and Optional Arguments
- Accessibility Modifiers
- Automatic Properties
- Construction and Assignment
- The Simple Types
- The null Reference
- Static and Instance Members
- Enumerated Types

- Partial Classes
- Static Classes
- Nested Types

Module 4 – Inheritance and polymorphism (mostly differences from Java)

- What is Inheritance?
- Extending a Class
- Polymorphism
- Upcasts and Downcasts
- *Virtual* and *Override* Modifiers
- *New* and *Sealed* Modifiers
- Abstract Classes
- Abstract Methods and Properties
- Interfaces
- Interfaces and Polymorphism
- Standard Interfaces: IEnumerable, IComparable, IComparer
- Side Casts
- The "*is*" and "*as*" Operators
- Multiple Interfaces
- Explicit Interface Implementation

Module 5 – Arrays, collections and strings

- Arrays
- Initializing Arrays
- The Array Class
- Multi-dimensional Arrays
- Jagged Arrays
- Indexers
- Standard Collections: ArrayList, Stack, Queue, Hashtable
- Strings
- String and StringBuilder

Module 6 – Exceptions

- Errors vs. Exceptions
- Error Handling Options
- The try block
- The catch block
- The throw statement
- The finally block

- Standard Exception Classes
- Custom Exceptions
- Checked and Unchecked Expressions
- Exception Handling Guidelines

Module 7 – Generics

- The Need for Generics
- Boxing & Unboxing
- Generic Types
- Standard Generic Collections
- Generic Methods
- Generic Interfaces
- Generic Constraints
- Nullable Types
- Other Aspects of Generics

Module 8 – Delegates & Events

- Delegate Basics
- Creating Delegates
- Invoking Delegates
- The Delegate and MultiCastDelegate Types
- Anonymous Delegates
- Lambda Expressions
- Generic Delegates
- Events
- The Publisher–Subscriber Pattern

Module 9 – Namespaces and assemblies

- Namespaces
- The using keyword (with namespaces)
- Assemblies
- Assembly loading
- The Global Assembly Cache (GAC)
- Deploying Assemblies
- Versioning and Probing

Module 10 – Threading

- Threading basics
- Creating and using threads
- Thread synchronization basics

Module 12 – Tasks

- The Task Parallel Library
- Task and Task<T>
- The Parallel class
- Async-Await

Module 12 – LINQ

- Partial Methods
- Iterators
- Extension Methods
- Lambda Expressions
- Object and Collection Initializers
- Anonymous Types
- Introduction to LINQ
- LINQ query syntax
- LINQ operators
- Introduction to XLINQ

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המרכז הבינלאומי
ללימודי הייטק וחדשנות

מתקדמים
לקריירה בהייטק

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קמפוסים בפריסה ארצית:

תל אביב	רחובות	ירושלים	באר שבע
ראול ולנברג 36 קריית עתידים	רחוב אופנהיימר 5 פארק המדע	רחוב יפו 34	רחוב האנרגיה 77 פארק ההייטק