

# C#: Developing in .NET with Visual Studio 2017/2015

Hands-on course of 5 days - 35h

Ref.: PSH - Price 2025: 3 030 (excl. taxes)

This course covers the C# language with a deep coverage of the object oriented programming concepts. During the course participants will develop object oriented applications using C# and Visual Studio 2005 within the .NET Framework 2.0.

## HANDS-ON WORK

At the very start of the course, the syntactical aspects of the C# language and the basic classes are illustrated with simple examples.

## THE PROGRAMME

last updated: 01/2024

### 1) Introduction

- Principle and architecture of the .NET environment.
- Main components: language, CLR, CTS, ...
- Benefits of the MSIL language.
- Execution model in .NET: managed execution benefits.
- Visual Studio. Type of projects. Help and documentation.

*Hands-on work : Development of a Windows application using the C# language. The steps necessary to construct, compile and run a program are covered in detail.*

### 2) Language syntax

- Basic understanding of the C# language.
- Values, operators and variables.
- Reference types : classes and interfaces.
- Exception handling. Program structure.
- Program debugging.

*Hands-on work : Programs development in C#.*

### 3) Object Oriented Programming

- Encapsulation and abstraction.
- Classes and objects. Inheritance. Polymorphism.
- Multiple interfaces implementation.
- Introduction to the modeling language UML 2.0.

### 4) Class development and objects creation

- Class and object definition.
- Class members: methods and properties.
- Static members. Overloads of methods.
- Object's life cycle and the garbage collector in action.
- Benefits of a typed language.
- Application structure through Namespaces.
- Inheritance: which members are inherited from a derived class ?

## PREREQUISITES

Programming experience and knowledge of computer languages. Experience with the C language would be an asset for this course.

## TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

## ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more. Participants also complete a placement test before and after the course to measure the skills they've developed.

## TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

## TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

## ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@ORSYS.fr to review your request and its feasibility.

- Abstract class. Generic collections and classes.

*Hands-on work* : Development of a C# application highlighting the main tasks of a professional .NET developer.

### 5) Interfaces

- Definition. Explicit and implicit implementations.
- The role of the interface in inheritance.

*Hands-on work* : Development of an object oriented C# application using the design by contract paradigm.

### 6) Exception handling

- Principle. Best practices in exception handling.
- Creating a custom exception class. Libraries.

*Hands-on work* : Exception handling implementation.

### 7) Assemblies

- Definition. Organizing a project through assemblies.
- Creating shared assemblies. Assembly deployment.
- Use of the Global Assembly Cache (GAC).

*Hands-on work* : Creation of shared assemblies. Distribution to the users' desktop and GAC

### 8) Application development with .NET technologies

- Evolution of the data access model in .NET Framework.
- ADO.NET technology for data handling.
- Web development with the ASP.NET namespaces.
- Service Oriented applications using Web Services.

## DATES

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### REMOTE CLASS

2025 : 01 sept., 08 déc.