

# Course : .NET Framework, application architecture

*Practical course - 5d - 35h00 - Ref. FRA*

**Price : 2610 € E.T.**

★★★★★ 4,4 / 5

Architecture has a major impact on an application's reusability and ability to evolve. In this course, you'll learn how to use the conceptual and software tools of the .NET framework environment to design a robust and flexible application architecture.

## Teaching objectives

**At the end of the training, the participant will be able to:**

- ✓ Understanding multi-layer architectures
- ✓ Implementing the MVVM pattern
- ✓ Implementing modular development with Prism
- ✓ Understanding the deployment and maintenance of modular applications

## Intended audience

Software architects, project managers, developers.

## Prerequisites

Good knowledge of C#, experience required. Basic knowledge of WPF.

## Practical details

### Hands-on work

Creation of a "red thread" application over the five days, enriched by the subjects covered in class and the demonstrations.

## Course schedule

### PARTICIPANTS

Software architects, project managers, developers.

### PREREQUISITES

Good knowledge of C#, experience required. Basic knowledge of WPF.

### 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.

## 1 Introduction

- Presentation of application architecture, desktop/Web/mobile, universal and cross-platform applications.
- Prism: modular, extensible development.
- The MVVM (Model-View-ViewModel) pattern.
- The MVC (Model-View-Controller) pattern.
- Dependency injection and extensibility with MEF (Managed Extensibility Framework) and Autofac.

### Hands-on work

Integrating tools into Visual Studio. Explore libraries and their installation.

## 2 Developments in the C# language, the user interface with WPF

- Review language developments, Lambda expressions and extension methods.
- Asynchronous developments (async and await).
- LINQ, XAML and WPF.
- Resource management, orders, user controls.
- Linking to data from observable collections.
- notifications in multi-tier architectures, WCF DualHttpBinding vs WebApi and WebSockets.

### Hands-on work

Creation of application base layers and user interface.

## 3 The MVVM pattern

- Features and responsibilities.
- Class interactions and relationships with other patterns.
- Test MVVM applications.

### Hands-on work

Description of the application's class model, addition of a test project to the application's solution.

## 4 Prism and modular application development

- Prism bookstores.
- Prism extensions.
- The use of MEF for dependency injection.
- Navigation between components.
- Communication between components.

### Hands-on work

Exploration of Prism QuickStarts and redesign of the red wire application.

### 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.

## 5 User interface composition

- The concepts.
- Design scenarios.
- Design rules.
- Sharing elements between desktop and mobile.
- Multi-target applications.
- Loading discovery.
- Loading dependencies.
- Loading options.

### Hands-on work

Implementation of the new red-wire application modeling.

## 6 Conclusion

- Deploying modular applications.
- Maintenance of modular applications.

## Dates and locations

### REMOTE CLASS

2026 : 16 Mar., 8 June, 19 Oct.

### PARIS LA DÉFENSE

2026 : 16 Mar., 8 June, 19 Oct.