

# Developing Windows Applications with WPF

Course code: DOTNET\_WPF

This course is designed for developers on the .Net platform who want to learn the techniques of programming WinForms and Windows Presentation Foundation (WPF) applications using Visual Studio.

## Required input knowledge

- Experience with c # programming at GOC2125 level is assumed
- Development experience with Visual Studio
- Experience with object-oriented programming in C #
- Experience with LINQ technology

## Teaching methods

- Expert explanation with practical examples, exercises on computers

## Course syllabus

Module 1 Windows application and WPF

- Application architecture for Windows
- Interoperability between Windows Forms and WPF

Module 2 Introduction to Visual Studio and WPF

- Basics of creating WPF applications in Visual Studio
- Basic elements of a common WPF application
- Stand-alone vs. browser-based (XBAP) WPF application

Module 3 UI user interface design and development

- Create Page Layout
- Use of Content Controls
- Use Items Controls
- What are Resources and how they are used

Module 4 User Interface

- Create consistent UI help styles
- Change the appearance of elements using templates
- Event Processing and Infrastructure Commands

Module 5 Unit Testing and Debugging

- WPF application testing strategy
- XAML debugging
- Processing Uncaptured Exceptions

Module 6 Simple Data Binding and Validation

- Basics of WPF Data Binding
- Create Data Binding
- Implementation of Property Change Notification
- Data conversion
- Data validation
- Design-time data display

Module 7 Data Binding on Collections

- Binding on a collection of objects
- Working with the ObservableCollection object
- Loading data from SQL Server database using Entity Framework and LINQ
- Use of Data Templates

Module 8 UI Behavior Improvements

### GOPAS Praha

Na Strži 2097/63  
140 00 Praha 4 - Krč  
Tel.: +420 226 201 390  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 530 513 590  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 902 903 132  
[info@gopas.sk](mailto:info@gopas.sk)



Copyright © 2026 GOPAS, a.s.,  
All rights reserved

# Developing Windows Applications with WPF

- Implementation of asynchronous processing
- UI implementation with fast response
- Working with the Task class
- Use the keywords async and await

## Module 9 Localization and help for application users

- Localization and Globalization
- Implementation of User Assistance Features
- Ensuring User Accessibility Features

## Module 10 WPF 2D graphics, multimedia and printing

- 2D graphics
- View images
- Add multimedia to WPF application
- Create and print documents

## Module 11 Creating custom elements

- Basics of creating elements for WPF
- Create User Controls
- Create Custom Controls
- Control the appearance of elements using Visual States

## Module 12 Attached Properties and Behaviors and WPF

- Implementation of Attached Properties
- Implementation of Expression Blend Behaviors, Triggers and Actions

## Module 13 Animation in WPF

- Creating animations
- Use triggers
- Implementation of data visualizations

## Module 14 Application class and application settings

- Application class
- Create and use application settings
- Application lifecycle

## Module 15 WPF application configuration and distribution

- Distribution options
- Distribution of stand-alone WPF applications using ClickOnce technology
- XBAP application distribution

### GOPAS Praha

Na Strži 2097/63  
140 00 Praha 4 - Krč  
Tel.: +420 226 201 390  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 530 513 590  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 902 903 132  
[info@gopas.sk](mailto:info@gopas.sk)



Copyright © 2026 GOPAS, a.s.,  
All rights reserved