

# Development of automated tests in Visual Studio

Course code: DOTNET\_TEST

The course offers an introduction to testing concepts and strategies and will teach you how to use the MS TEST framework, but you will also try other frames such as NUnit and XUnit. The course covers unit testing concepts, requirements and characteristics of good testing strategies and ways in which these concepts can be implemented. Emphasis is placed on the practical application of acquired knowledge.

Affiliate	Duration	Course price	ITB
Praha	5	27 000 Kč	50
Brno	5	27 000 Kč	50
Bratislava	5	1 150 €	50

The prices are without VAT.

## Course terms

Date	Duration	Course price	Type	Course language	Location
T 10.03.2025	5	27 000 Kč	Telepresence	CZ/SK	GOPAS Praha_GTT
T 10.03.2025	5	27 000 Kč	Telepresence	CZ/SK	GOPAS Brno_GTT
T 10.03.2025	5	900 €	Telepresence	CZ/SK	GOPAS Bratislava_GTT
T 16.06.2025	5	27 000 Kč	Telepresence	CZ/SK	GOPAS Brno_GTT
T 16.06.2025	5	27 000 Kč	Telepresence	CZ/SK	GOPAS Praha_GTT
T 16.06.2025	5	900 €	Telepresence	CZ/SK	GOPAS Bratislava_GTT

The prices are without VAT.

## What we will teach you

You will learn the basic terminology of testing and you will better understand the testing process You will learn to create tests using the MS TEST framework You will learn about the Test Driven Development approach You will learn to monitor the progress of the tests You will improve your ability to find defects and prevent them

## Required input knowledge

Experience with programming in c # at GOC2125 level is assumed Basic testing experience is beneficial

## Teaching methods

Expert explanation with practical examples, exercises on computers

## Course syllabus

Introduction and terminology

- Types of tests
- UAT
- Integrative
- Unit - unit size

Testable application architecture

- Status of classes and components
- Encapsulation
- Static operations
- IoC / DI and implications for testing

Creating tests using MS TEST framework

### GOPAS Praha

Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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# Development of automated tests in Visual Studio

- Anatomy test (AAA)
- Test explorer
- Running tests
- Read results
- Debugging tests
- Initialization and cleanup
- Assertion (Assert, CollectionAssert, StringAssert)
- Data driven tests

## Unit insulation

- Creating fake implementations of collaborating objects
- Manual fake objects
- Moq
- Microsoft Fakes tool

## Test Driven Development

- "Test First" approach
- Red-Green-Refactor
- Finding test cases using the "Devil's Advocate" technique

## Code coverage analysis

- Code blocks and quantification
- Syntax coloring
- What percentage is just?

## IntelliTest

- Generating unit tests
- Configuration

Configure the Test runner using a .runsettings file

## Other test frameworks

- NUnit
- XUnit

Azure Pipelines and test runs

### GOPAS Praha

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### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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