

**Introduction to Xamarin.Forms Development**

**Course Number:** MBL-228
**Duration:** 3 days

**Overview**

In this Xamarin.Forms training class, students take a deep-dive into the different approaches used to build Xamarin applications. Attendees gain an understanding of the XAML language, which is the best approach for building Xamarin.Forms applications. In addition, participants learn about MVVM, the pattern typically used for creating XAML-based applications. After taking this course, students will feel confident building apps with Xamarin.Forms.

**Prerequisites**

All students must have C# knowledge, as this course (and Xamarin.Forms) use C#. XAML knowledge is not required.

**Materials**

All Xamarin training students receive comprehensive courseware.

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**Software Needed on Each Student PC**

Visual Studio 2019 (updated with the latest available updates).

**Objectives**

* Prepare their environment for Xamarin
* Identify the different approaches for creating cross-platform applications that share code among UWP, iOS, and Android
* Apply the basics of Xamarin.Forms
* Use XAML
* Use a data binding framework to make working with data much easier
* Create a UI that works well on all types of devices
* Create MVVM-based Xamarin applications
* Utilize the most commonly used navigation patterns
* Use custom renderers to extend the behavior of applications
* Create complex layouts
* Use the ListView in a more advanced scenario
* Integrate cloud services with applications

**Outline**

* Introduction to Cross-Platform Development with Xamarin
	+ Hello Xamarin!
	+ C# everywhere
	+ How Xamarin works
	+ Xamarin components
	+ Visual Studio integration
	+ Visual Studio for Mac
	+ Xamarin Forms and XAML
	+ Preparing your environment for Xamarin
* Cross-platform Code-Sharing Approaches and Architectural Considerations
	+ Code-sharing options
	+ The architecture of a Cross-platform Xamarin application
	+ Shared Projects
	+ Portable Class Libraries (legacy)
	+ .NET Standard and the future with .NET 5
* Introduction to Xamarin.Forms
	+ Introduction to Xamarin Forms
	+ Project structure
	+ Pages
	+ Views
	+ Layouts
	+ Lists and Cells
	+ Navigation
	+ Platform features
	+ Working with the DependencyService
	+ Using Xamarin Plugins
	+ Custom renderers intro
	+ App Lifecycle
* XAML and Data Binding in Xamarin.Forms
	+ What is XAML?
	+ Building an app with XAML
	+ XAML Syntax
	+ XAML Markup Extensions
* Data Binding in Xamarin.Forms
	+ Data binding introduction
	+ Syntax
	+ Using the binding context
	+ Converters
	+ Binding Modes
	+ Changes through the INotifyPropertyChanged
* Styling and Layout
	+ Styles introduction
	+ Implicit styles
	+ Style inheritance
	+ Theming an app
* Creating Xamarin.Forms Applications Using MVVM
	+ Hello MVVM
	+ ViewModels
	+ Behaviors
	+ Commanding
	+ Messaging
	+ View model locators
	+ Testing MVVM-based applications with unit tests
* Navigation Patterns in Xamarin.Forms
	+ The most commonly used navigation patterns including master-detail and drawer navigation
* Working with Custom Renderers and Effects
	+ Custom renderers
	+ Integrating Xamarin.Forms and classic Xamarin
	+ Extending the Xamarin.Forms platform
* More Layout in Xamarin.Forms
	+ Complex types of layouts using Xamarin.Forms
	+ The new FlexLayout
	+ Layout using stylesheets
	+ Control template and the Visual State Manager
* The ListView, In-Depth
	+ DataTemplateSelector
	+ Headers and footers
	+ Context actions
	+ ListView in a more advanced scenario
* Working with Data (Databases and Cloud/Services)
	+ Using Xamarin.Forms to get data into applications.
	+ How applications can connect with all types of services (REST, WCF…)
	+ Bringing several cloud services into our applications (storage, mobile services…)
	+ Storing data in files or a local database
* Building an Enterprise Application Architecture with Xamarin.Forms
	+ Application architecture
	+ Working with data and repositories
	+ Services
	+ Navigation and wrappers for navigation
	+ Bootstrapping the application
	+ Dependency injection (Autofac)
	+ Dialogs
	+ Unit testing
* Xamarin.Forms Essentials
	+ XF Essentials to add cool features to our apps
* Miscellaneous Topics
	+ Application lifecycle
	+ Using custom fonts
	+ Using Gestures
	+ Localizing applications
	+ Animations
	+ Drawing with SkiaSharp
	+ Storing secrets in Xamarin.Forms applications
	+ Performance optimizations in Xamarin.Forms
	+ Integrating with the platform more closely
	+ Using Xamarin.Forms Shell
* Conclusion