

## **TFS 2015 Developer Fundamentals - Git**

### **Version**

2015.0

### **Duration**

2 days

### **Skill Level**

Intermediate

### **Audience**

Development team members using Git for version control

### **Products and Technologies**

The following product and technologies will be covered in this course

- Visual Studio 2015
- Team Foundation Server 2015 or Visual Studio Online
- Git

### **Course Description**

Team Foundation Server 2015 and Visual Studio Online offer many features to help make a developer more productive. Unfortunately, developers who are self-taught, or those who are moving to TFS/VSO from version control-only products often fail to gain the full benefit from this product.

This two-day course has been designed for developers wanting to work efficiently with Team Foundation Server 2015 or Visual Studio Online. It focuses on Team Foundation Version Control (Git) rather than TFVC for version control.

This course starts by getting developers familiar with the product suite before they create a new team project to organize their work. We then move on to Work Item Tracking, which is where requirements, tasks, bugs, and more are defined and tracked throughout the project.

The central part of the course provides a deep dive into Git version control topics that are central to a developer's day to day work. This includes configuring a Git environment, day-to-day use of Git, and branching in Git. We also look at Git workflows and how to administer Git.

The course then examines unit testing and code quality features before moving on to the new build automation introduced in the 2015 product release. The final module of the course examines features designed to improve team collaboration, such as Team Rooms and Code Review.

## Product and Version Compatibility

- **Team Foundation Server or Visual Studio Online**

This course is equally applicable for teams using either Visual Studio Online or on-premises Team Foundation Server.

- **Previous versions of Team Foundation Server**

Much of this course is suitable for attendees currently using the previous 2013 product version. The module covering the new Build system will not be directly relevant for users of TFS 2013, but it will provide great insight into the 2015 version for when they choose to upgrade.

## Course Objectives

At the completion of this course, attendees will be able to:

- Create, configure, and manage Team Projects
- Use Team Explorer to navigate project content
- Manage work using work items, including how to configure links correctly
- Use work items such as Task and Bug to provide traceability
- Create and customize work item queries to find and organize work
- Set up and manage their own custom alerts (notifications)
- Understand core Git version concepts and how they apply to TFS or VSO
- Configure a Git environment
- Understand the different Git workflows that are available
- Work with branches in Git
- Configure and administer permissions in Git
- Work with unit tests and the Test Explorer window
- Use Code Metrics and Static Code Analysis
- Use the new Build system introduced in TFS 2015 and Visual Studio Online
- Work with legacy XAML build definitions
- Improve team collaboration using Team Rooms and Code Review

## Audience

This course is designed for all Visual Studio 2015 developers who are starting work in a team with either Visual Studio Online or Team Foundation Server. The course focuses on features common to both the professional and enterprise editions of Visual Studio 2015.

## Prerequisites

Attendees should have some familiarity with Visual Studio.

## Modules

Module 1: Introducing the Microsoft Visual Studio 2015 Family

- What's new in Visual Studio 2015
- Overview of the Visual Studio 2015 family
- Overview of product features
- A lap around Visual Studio Online
- Project workflow across the Visual Studio 2015 suite of products

#### Module 2: Creating and Configuring Team Projects

- Understanding team projects and team project collections
- Selecting a process template
- Creating team projects
- Configuring permissions
- Renaming or deleting team projects

#### Module 3: Understanding and Using Work Items

- Overview of work items
- Traceability between work items
- Creating custom queries
- Work item charting and pinning charts
- Work item tagging
- Configuring project alerts and notifications

#### Module 4: Git Version Control Concepts

- Centralized vs distributed version control
- Git internals
- Git stages
- Git as a deployment tool

#### Module 5: Configuring a Git Environment

- Selecting a Git client
- Configuring user preferences and identity settings
- Creating a repository

#### Module 6: Using Git

- The basic Git workflow
- Local vs remote repository
- Undoing work at each stage
- Understanding .gitignore
- Creating tags

#### Module 7: Branching with Git

- Creating and merging branches

- Pull requests

#### Module 8: Git Workflows

- The basic Git workflow
- Centralized workflow
- Feature branch workflow
- Open source workflow
- GitFlow workflow

#### Module 9: Administering Git

- Configuring permissions on repositories
- Creating multiple repositories
- Configuring push alerts

#### Module 10: Unit Testing and Code Quality Tools

- Unit testing in Visual Studio
- Visual Studio Test Explorer
- Code metrics
- Static Code Analysis

#### Module 11: Using Git in Your Automated Builds

- Understanding the new 2015 build infrastructure
- Creating new build definitions
- Running tests as part of your build
- Extending builds using scripts
- Working with legacy XAML builds

#### Module 12 – Team collaboration

- Enhanced communication using Team Rooms
- Improving quality using Code Reviews