# TFS 2017 Immersion

# Course Summary

### Description

This five-day immersion course is designed to get your entire team working efficiently with Microsoft's Application Lifecycle Management solution based around Visual Studio Team Foundation Server 2017 or Visual Studio Team Services. The course is divided into different topics on each of the days to help you gain a complete understanding of the features and capabilities of Visual Studio Team Foundation Server 2017.

This class is designed for individuals or complete development teams who need to learn how to use Visual Studio 2017 and Team Foundation Server 2017 for Agile software development. This course covers team development, managing projects, Agile development, Agile testing, and DevOps.

This course can also be taught onsite at your facilities and can be customized to meet the needs of your specific team members. This course includes hands-on labs to reinforce practical skills and ensure you're ready to use the tools on your return to your workplace.

### Objectives

By the end of this course, students will be able to:

- Describe the full feature set of Microsoft's Application Lifecycle Management suite
- Create team projects and team project collections as appropriate for their environment
- Understand how work item tracking can be used across the entire team
- Create custom work item queries and notifications
- Use a variety of clients to interact with team members and TFS
- Use the version control system to maintain source code as well as branch and merge code
- Improve code using the code review workflow in My Work
- Create automated builds and automate the execution of unit tests
- Manage projects using the Agile planning tools
- Create portfolio backlogs to help manage large projects
- Manage work in teams including sprints and backlogs
- Create test plans, test suites, and test cases
- Perform a variety of testing using Microsoft Test Manager and the Test Hub
- Raise information-rich bugs and verify them once resolved
- Perform exploratory testing
- Create and modify builds to include automated testing and deployment
- Deploy software using Release Management
- Configure Application Insights to monitor your applications

### Topics

- Team Development
- Managing Agile Projects
- Agile Development
- Agile Testing
- DevOps

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## **Course Summary** (cont’d)

### Audience

This class is designed for all team members looking to effectively use the team-oriented features provided by Microsoft Visual Studio 2017 and Team Foundation Server 2017. This includes developers,testers, business analysts, and build and release staff.

### Prerequisites

Attendees should be familiar with the needs of a software development team and the basic processes they would follow. Familiarity with Visual Studio and the basic use of Team Foundation Server or Visual Studio Team Services would be a benefit.

### Duration

Five days

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## Course Outline

I. **Team Development**
   A. Introducing Microsoft Visual Studio 2017 and TFS 2017
      1. What's new in Visual Studio 2017
      2. Overview of the Visual Studio 2017 family
      3. A lap around Visual Studio Team Services
   B. Organizing Work with Team Projects
      1. Organizing projects in TFS or VSTS
      2. Understanding process templates
      3. Creating a new team project
      4. Setting team project properties
   C. Managing Work Using Work Items
      1. Overview of work items
      2. Traceability between work items
      3. Searching and creating custom queries
      4. Work item charting and pinning charts
      5. Work item tagging
      6. Configuring project notifications
   D. Integrating the Team Using Different Clients
      1. Using Team Explorer
      2. Using Microsoft Excel to create and manage work items
      3. Team Web Access
      4. Third-party clients

II. **Managing Agile Projects**
   A. Creating Our Product Backlog
      1. Examining requirement types
      2. Creating backlog items
      3. Creating requirement hierarchies using features and epics
      4. The importance of acceptance criteria
   B. Agile Estimation
      1. Introduction to estimation
      2. Using story points
      3. Planning Poker and other popular estimation techniques
      4. Adding your estimates to work items
   C. Working from the Product Backlog
      1. Introducing the Kanban board
      2. Entering and editing details on the Kanban board
      3. Customizing columns including using split columns and limiting WIP
      4. Recording our Definition of Done (DoD)
      5. Understanding the Cumulative Flow Diagram
   D. Working in Sprints
      1. Specifying your sprint schedule and team capacity
      2. Selecting items for the sprint backlog using forecasting
      3. Decomposing requirements into tasks
      4. Using burndown charts to track progress
      5. Monitoring work using the task board
      6. Working with unparented work items
   E. Creating and Customizing Reports
      1. Overview of reporting architecture
      2. Reviewing the out-of-the-box reports
      3. Adding new reports
      4. Creating ad hoc reports using Excel

III. **Agile Development**
   A. TFS Version Control Concepts
      1. Version control in Visual Studio
      2. Version control terminology
      3. A closer look at workspaces
      4. Changesets and shelvesets
   B. Using Team Foundation Version Control
      1. The Source Control Explorer
      2. Getting code into TFVC
      3. Understanding the Pending Changes experience
      4. Linking changesets to work items
      5. Locking files in TFVC

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## **Course Outline** (cont'd)

C. Configuring an Effective Version Control Environment
   1. Working with workspaces
   2. Setting team-project-wide source control settings
   3. Check-in policies
   4. Backward compatibility using the MSSCCI provider

D. Branching and Merging
   1. Defining a branching strategy
   2. How to branch
   3. Branch visualization and tracking changes
   4. Merging and resolving conflicts
   5. Custom differencing tools

E. Unit Testing and Code Quality Tools
   1. Unit testing in Visual Studio
   2. Visual Studio Test Explorer
   3. Code metrics
   4. Static code analysis

### IV. Agile Testing

A. Creating Your First Test Plan
   1. Creating a test plan
   2. Creating test suites
   3. Mapping requirements to tests
   4. Mapping effort to specific builds
   5. Configuring test settings including data collectors

B. Authoring Test Cases
   1. Creating and managing test cases
   2. Creating reusable shared steps
   3. Databinding our test cases
   4. Using shared parameters

C. Executing Test Cases
   1. Assigning a test case to a tester
   2. Navigating the Microsoft Test Runner
   3. Recording reliable action recordings
   4. Test Case Fast Forward

D. Raising and Verifying Bugs
   1. Raising a bug from the Microsoft Test Runner
   2. Viewing bug states
   3. Verifying a bug fix

E. Exploratory Testing
   1. What is exploratory testing?
   2. Tools for exploratory testing
   3. Creating bugs and test cases from exploratory tests

### V. DevOps

A. An Overview of DevOps
   1. Demystifying the DevOps buzzword
   2. Understanding DevOps value
   3. How the Microsoft stack supports DevOps

B. Continuous Integration and Build Automation
   1. Understanding the build infrastructure
   2. Creating new build definitions
   3. Configuring continuous integration
   4. Build customization
   5. Working with legacy XAML builds

C. Release Management
   1. Creating a release pipeline
   2. Overview of deployment options
   3. Configuring continuous deployment
   4. Deploying applications to Azure

D. Continuous Testing
   1. Configuring automated testing
   2. Web tests and load tests

E. Monitoring Your Application Using Application Insights
   1. Overview of Application Insights
   2. Adding Application Insights to your web application
   3. Tracking usage data
   4. Viewing Application Insights data in the portal