# Git Fundamentals



**Meet the expert:** Philip Wheat is an industry veteran who has been active in the computer industry for over 20 years. With experience stretching back to the beginnings of the PC era, he has remained active on the leading edges of technology, focusing on embedded systems, knowledge management, and sensor technologies. He is one of the few who has worked with SharePoint since the original beta, has built his own microprocessor, and has had robotics projects featured in the press and TV shows around the world.

**Prerequisites:** Basically if you can use a command line you can use it. It's also appropriate not just for developers but for anyone working on projects, so your creative people and project managers would find the skills useful as well as developers.

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**Course description:** In this course we'll cover using Git to manage your project files. Git is a very lightweight but powerful system to manage changes, not just in your source code, but in documents, graphic assets and basically anything you use to deliver projects. You'll see how to work with local and remote repositories, branch your changes, merge them, share them and all with a few simple commands. This course is very focused on seeing Git in operation and is designed to be easy to follow along with the demos and perform the functions yourself.

**Course outline:**

**Background**
- Introduction
- What is Git?
- Why use Version Control?
- Why Git?
- Summary

**Install and Configure**
- Introduction
- Versions and Locations
- Installation
- Installed Components
- Configuration
- Demo
- Demo: Install Git
- Demo: Install Git – PATH
- Demo: Install Git – Config
- Demo: Install Git – MAC
- Demo: Config Git – MAC
- Summary

**Basic Operation**
- Introduction
- Basic Workflow
- Demo
- Demo: Git - Repository
- Demo: Git – Clone
- Demo: Git – GitHub
- Demo: Git – Commit / Branch
- Demo: Git – Branch (cont.)
- Demo: Git – Merge
- Demo: Git –Tagging
- Summary

**Basic Operation Continued**
- Introduction
- Demo A Simple Project
- Preparing a Repository
- Adding Files
- Ignoring Files
- Creating a Commit
- Pushing Changes
- Creating a Branch
- Merging a Branch
- Tagging Commits
- Summary

**Advanced Commands**
- Introduction
- Interactive Mode
- Patch
- Diff
- Amended Commit
- Reset
- Stash
- Rebasing Content
- Summary

**Visual Studio**
- Introduction
- When to use VS tools
- Demo: VS Tools
- Demo: FX Control
- Demo: Unsynced Commits
- Summary

**Takeaways**
- Introduction
- Git Benefits
- Strong Tooling Support
- Summary