

**Days:** 2

**Audience:** This course is designed for DevOps Engineers, Software Developers, Telecommunications Professionals, Quality Assurance & Site Reliability Professionals.

**Description:** This hands-on course provides a solid foundation in Git and GitHub—essential tools for modern version control and collaboration. Whether you're a developer, DevOps engineer, or working in any digital field, you'll learn to manage code, track changes, and contribute effectively to shared projects.

Over two instructor-led days, you'll cover Git fundamentals, branching strategies, and GitHub collaboration features like pull requests, forks, and issues. You'll also get hands-on with more advanced GitHub capabilities, including:

- Building CI/CD workflows with GitHub Actions
- Deploying container images to platforms like Azure and Kubernetes
- Using GitHub Copilot and prompt engineering for code generation
- Authenticating securely with SSH and tokens

You'll work with projects in Python, Java, and Go, and finish with a capstone on release-based workflows. Whether you're new to Git or ready to level up, this course equips you with the skills to manage code and collaborate with confidence.

**Course Objectives:** In this course, you will:

- Build custom CI/CD workflows with GitHub Actions
- Manage Python, Java, and Go projects using Git
- Automate builds, tests, and deployments to platforms like Azure and Kubernetes
- Use AI tools like GitHub Copilot for config snippets and code suggestions

## OUTLINE:

### AI LAB ASSISTANCE

- Lecture + Lab: Setup Copilot with VIM
- Lecture + Lab: Copilot in the CLI

### GITHUB

- Lecture: Software Control Management Software
- Lecture: What to Choose?
- Lecture + Lab: Revision Control with GitHub
- Lecture: Overview of GitHub
- Lecture: Collaborating on GitHub
- Lecture: Markdown

### SSH AND TOKENS

- Lecture + Lab: GitHub and SSH Keys
- Lecture + Lab: GitHub and Tokens

### INTEGRATION

- Lecture: Webhook - HTTP Notifications
- Lecture + Lab: GitHub Webhooks
- Lecture + Lab: GitHub Desktop

### CORE GIT CONCEPTS

- Lecture + Lab: Introduction to Git
- Lecture + Lab: Branches and Pull Requests
- Lecture + Lab: Searching a GitHub Project
- Lecture + Lab: GitHub Pages and Markdown
- Lecture + Lab: Additional GitHub Project Tools
- Lecture + Lab: GitHub Codespaces and Visual Studio Code

### GITHUB ACTIONS

- Lecture: GitHub Actions for CI/CD Workflows
- Lecture + Lab: Secrets and GitHub
- Lecture + Lab: GitHub Actions - GitLeaks
- Lecture + Lab: GitHub Actions - Terraform

### GITHUB COPILOT

- Lecture: Introduction to GitHub Copilot
- Lecture + Lab: GitHub Copilot Account Setup

### APPENDIX

- Lecture + Lab: Git Merge Strategies
- Lecture + Lab: Configure Git to Use a Proxy
- Lecture + Lab: Git Merge, Rebase, and Squash
- Lecture: Glossary