



## Git and GitLab Essentials

- 2 Day Course
- Lecture and Lab
- This course includes an opportunity to earn a certification from Alta3 Reserch, as well as preparation for passing GitLab Certifications.

### Course Overview

This course covers the fundamentals necessary to utilize Git and GitLab for the management of software development lifecycling using continuous integration and continuous delivery (CI/CD). At its core, GitLab offers a web-based Git repository manager featuring issue tracking, analytics, and a wiki. Within the suite includes tools to trigger builds, run tests, and deploy code with each commit or push. Builds can target Docker containers or Virtual Machines. GitLab's ability to offer a DevOps platform in a single application makes it an attractive choice for enterprise users.

### Who Should Attend

- DevOps Engineers
- Software Developers
- Telecommunications Professionals
- Architects
- Quality Assurance & Site Reliability Professionals

### What You'll Learn

- Use Git and GitLab to view, create, and manage code, as well as the role GitLab can play in automating builds and shortening release of applications
- Git commands - including how to check code to repositories
- Team collaboration methods for projects and advancing code
- Merge requests and resolving conflicts
- Pipelines for GitLab CI / CD
- GitLab Runner for GitLab CI/CD
- GitLab Container Registry
- Project Webhooks
- GitLab for DevOps life cycle, from planning through to creation, build, verification, security testing, deployment to production environments, such as Kubernetes, and monitoring.
- AI LLM prompt engineering for relevant configuration snippets and solutions

### Outline



#### Certification

-  Lecture + Lab: (OPTIONAL) - Git and GitLab Certification Project









#### AI LLM Toolkit

-  Lecture + Lab: Large Language Model toolkit for AI Solution Assistance







## Core Git Concepts

-  Lecture + Lab: Introduction to Git
-  Lecture + Lab: Git Branching



## GitLab

-  Lecture + Lab: Up and Running with GitLab
-  Lecture + Lab: Generating and Using SSH Keys
-  Lecture + Lab: Git and GitLab Interaction
-  Lecture + Lab: Fixing Merge Conflicts
-  Lecture + Lab: Writing Markdown in GitLab
-  Lecture + Lab: GitLab Project Wikis
-  Lecture + Lab: GitLab Collaboration
-  Lecture + Lab: GitLab Webhooks
-  Lecture + Lab: GitLab API Calls

## GitLab CI CD

-  Lecture + Lab: Introduction to CI CD
-  Lecture + Lab: Building a Docker Image
-  Lecture + Lab: Creating gitlab-ci.yml
-  Lecture + Lab: Lifecycling a GoLang App with GitLab
-  Lecture + Lab: GitLab Container Repository
-  Lecture + Lab: GitLab Integration with Kubernetes Clusters

## DevSecOps

-  Lecture + Lab: Intro to DevOps
-  Lecture + Lab: Intro to DevSecOps