Overview of DevOps (5 hrs)

- Evolution towards DevOps (Why)
- The Principles of DevOps
- The Practices of DevOps (Version Control, TDD, BDD, CI, Containerization, Automation, API Testing)
- The Mindset of DevOps (Culture)
- The tools of DevOps (Git, Maven, TestNG, Mockito, Selenium, Rest Assured, Jenkins, Docker and the various alternatives)
- DevOps Introduction
o What is DevOps?
o DevOps Practices?
o The Challenge
o Benefits of DevOps over Traditional IT
o DevOps Tools
o What is CI and CD
o DevOps as a profession – DevOps Engineer
- Azure DevOps
o What is Azure DevOps
o Version History
o Azure DevOps Features
o Azure DevOps Tools and Project Life Cycle
o Create DevOps Account
o Create Organization
o Create Project and Get Started
o Create Users and invite teams members
- Azure Boards
o Introduction
o Working with Work Items
o Epic, Feature, User Story, Task, Bug and Test Cases
o Linking Items
o Collaborate with Team members
o Follow a Work Item
o Dashboards
o Capacity Planning with Sprints
o List work items using Queries

GIT and GitHub basics (2 hrs)

- Introduction to Version Control
- CVCS, DVCS Concepts
- GIT Setup and Architecture
- GIT Commands and concepts: clone, init, add, status, commit, log, diff, push, pull, stash, pop, revert, etc
- Configuring remote repository
- GitHub basics

Maven (2 hrs)

- Maven Basics – Goals, Phases, Priority, Plugins, POM.xml
- Selenium Integration with build tool Maven
- Adding dependencies
- Executing scripts using Maven

Selenium / Web Driver (8 hrs)

- Introduction and Configuration
- Identifying Web Elements / Locators
- XPath and CSS
- Synchronization
- Multiple Windows, PopUps, Frames
- Mouse and Keyboard Actions
- Capturing Screenshot

TDD Overview (1 hr)

- Red bar patterns
- Green bar patterns

TestNG (3 hrs)

- What is TestNG?
- TestNG.xml file
- TestNG Annotations
- Integrating with Selenium
- Parameterization using TestNG
- TestNG Reporting
- Data Driven Testing
- Reading, writing data into Excel

Page Object Model Framework (4 hrs)

Jenkins (2 hrs)

- What is Continuous Integration?
- Introduction to Jenkins
- Jenkins Architecture
- Creating Jenkins Jobs / Projects
- Scheduling script executions in Jenkins
- Sending email reports using Jenkins Job

BDD Overview (1 hr)

- What is BDD, Evolution towards BDD, Why BDD
- The 3 Practices of BDD

Cucumber (4 hrs)

- Basics of Gherkin
- Creating Features and Scenarios in Gherkin
- Data Tables, Scenario Outlines / Example Tables
- Cucumber Fixtures, Annotations, Expressions
- Tags for Execution control
- Cucumber Reporting

API Testing with RestAssured (8 hrs)

- Introduction to API testing
- Configuring RestAssured
- Creating GET requests
- Validating Response Code, Status, Content
- Creating tests with multiple requests
- Creating POST, PUT, DELETE, other requests
- Creating Payload
- Extracting data using JsonPath
- Data driven testing
- Creating end to end tests using multiple APIs
- Framework for RestAssured