Advanced Level Test Automation Engineering 2.0

Duration: 3 days

Prerequisites:

a. Must hold CTFL 4.0 or previous version Certification.
b. Practical Experience of Automation Engineering

Day 1 – Foundations and Architecture of Test Automation

1. **Introduction and Objectives for Test Automation**

   - Purpose of Test Automation
   - Advantages and Disadvantages
   - Automation Across SDLC Models
   - Tool Selection for **Different System Types**

2. **Preparing for Test Automation**

   - Infrastructure Configuration Needs
   - Automation in Different Environments
   - Evaluation and Selection of Automation Tools
   - Technical Findings and System Analysis

3. **Test Automation Architecture (Part 1)**

   - Capabilities of a Test Automation Architecture
   - Designing Test Automation Solutions
   - Layering of Test Automation Frameworks

Day 2 – Implementation, CI/CD, Reporting

4. **Test Automation Architecture (Part 2)**

   - Approaches for Automating Test Cases
   - Design **Principles and Design Patterns in Automation**

5. **Implementing Test Automation**

   - Guidelines for Automation Development & Pilots
   - Risk Analysis and Mitigation
   - Maintainability Factors

6. **Implementation and Deployment Strategies**

   - CI/CD Pipeline Integration
   - Configuration Management for Testware
   - API Infrastructure Dependencies

7. **Test Automation Reporting and Metrics (Part 1)**

- Data Collection Methods
- Analyzing Automation Data

Day 3 – Verification and Continuous Improvement

8. **Test Automation Reporting and Metrics (Part 2)**

   - Constructing and Publishing Test Progress Reports

9. **Verifying the Test Automation Solution**

   - Verification of Tool Setup and Environment
   - Expected Behavior and Troubleshooting
   - Static Code **Analysis for Quality**

10. **Continuous Improvement**

    - Identifying Improvement Opportunities
    - Analyzing Deployed Automation Solutions
    - Restructuring Testware to Align with SUT
    - Strategic Use of Automation Tools