

- Discover how to implement test automation as stories are implemented
- Confidently deliver shippable product increments each sprint using automation
- Understand how to collaborate with business analysts, programmers, and customers to integrate automation into your team's workflow
- Work without the need of separate, independent test automation teams
- Explore how complex non-functional testing can be automated in a sprint
- Discover how tools such as mind mappers, recorders, and note takers generate defensible evidence of regulatory compliant testing

Most agile teams deliver potentially shippable software at the end of each iteration (one to four weeks), but some agile teams even ship working software every day. Regression confidence can be achieved with the help of automated tests, which many teams struggle with. This class will teach automation techniques to improve regression testing, story and feature testing, and enhancement of exploratory testing. Test Driven Development techniques, precise test and tool selection, appropriate automation design, and team collaboration can be combined to fully integrate testing into Agile delivery teams and provide the efficiency necessary for project success.

Explore the many ways automation supports agile testing activities. Test automation purpose, theory, and principles are reviewed. We look at how test automation is implemented in diverse organizations. The course presents many types of automation illustrated with example test descriptions, source code samples, and example test scripts.

This course will provide real-world, vendor-neutral examples of Agile Test Automation approaches and tools. Examples of automated tests for Test Driven Development (TDD), Acceptance Test Driven Development (ATDD), and Behavior Driven Development (BDD) will be given.

## Who Should Attend

This course is for agile team members involved in testing, programming, business analysis, software construction, and deployment. Product owners, managers, and other development professionals will gain important insights into the benefits and trade-offs related to agile test automation. No specific prerequisites are assumed, and any technical concepts will be explained; however, attendees are expected to have some software and agile knowledge or experience.

## Looking for Certification?

For teams and individuals seeking professional certification in test automation, we recommend [Fundamentals of Test Automation—ICAgile Certification](#) [1] for developer and testing roles who need to learn automation or improve their existing automation knowledge, and [Advanced Tester Certification—Test Automation Engineer](#) [2] for test professionals who hold the ISTQB® Certified Tester—Foundation Level (CTFL) certification.

## Course Outline

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### Test Automation Strategy

Where test automation fits in  
How much test automation  
What not to automate

### Automation Pyramid

Presentation  
Application  
Structural

### Static Code Analysis/Metrics

Code metrics  
Changing complexity and risk  
Security risks  
Maintainability risks

### Automating Story and Feature Testing

Defining acceptance tests  
Cross story testing

## **Planning for Automation**

Skills

Tools

Workflows

## **Automation Frameworks**

Unit Test Harness

Acceptance Test Frameworks for ATDD and BDD

Traditional capture playback test frameworks

## **Selecting Tests for Automation**

Structural regression

Business facing regression

Repetitive operations

Improve ability to control and observer

## **Supporting Process**

Roles and Responsibilities for test automation

Test Driven Development

Acceptance Test Driven Development

Behavior Driven Development

Design Driven Testing

Legacy automation

## **Testing and Continuous Integration**

Build environments

Structure regression

Business facing regression

Static analysis

## **Automated Test Cycles (Continuous Testing)**

Flow of implementing a story

Grooming and test automation

Programming and test automation

In sprint testing activities

Non-functional testing activities

Dynamic analysis

Data driven testing

Keyword driven testing

Scripting

## **Mapping Tests to Automation**

Acceptance tests to automate

Unit tests to automate

Regression coverage

## **ATDD and BDD Testing Frameworks**

Fitness

Cucumber

## **UI Testing Frameworks**

Capture playback test generalization

Open source frameworks

Commercial frameworks

## **Automation Support for Integration and System Testing**

End-to-end transaction testing

Continuous integration

## **Data Setup and Tear Down and Data Within Automation**

Self contained test models

Data independent models

Mocking

## **Tools to Support Exploratory Testing**

Scripting

Note taking

Mind Mapping

Screen capture

## **Tools for Performing Non-Functional Testing**

Performance testing tools

Stress testing tools

Usability testing tools

Security testing tools

## **Virtualization**

Virtual unit test environments

Virtual business facing test environments

Locale variations

Reset systems to a controlled state