

This course teaches students how to implement a high level of software quality within the context of an agile development approach. Students will learn concepts and approaches, useful for agile projects, in the development of automated tests, code re-factoring, and continuous integration. The course will prepare team members to understand the unique challenges and to employ best practices when addressing the testing aspect of agile development.

You will learn how to create and conduct functional testing within an iterative software development lifecycle.

Course Objectives:

- Understand test-driven development
- Incorporate user stories’ acceptance criteria into automated tests
- Utilize a testing framework
- Develop software using continuous integration
- Understand code re-factoring
- Describe how test-driven development impacts design.

Audience: Developers, project managers, test leads, architects, and systems analysts.

Prerequisites: *Effective User Story Development* or a basic understanding of user story writing and knowledge of a programming language is helpful.

Number of Days: 1 day

<p>1 Test Driven Development (TDD) Origins/explanation of TDD Rationale for incorporating TDD Testing basics Principles of TDD <i>Exercise: Write sample tests.</i></p>	<p>4</p>	<p>Code coverage Coverage reporting TDD and Unit Testing Test first concepts and techniques. Testing frameworks Using the Strategy design pattern <i>Exercise: Design a simple test framework</i> Repeat writing and re-factoring code to pass tests <i>Exercise: Write simple tests</i></p>
<p>2 User Story Acceptance Testing Understanding user story acceptance criteria Scenarios and business flow models Where and when to incorporate testing in an agile project Definition of “done” <i>Exercise: Write acceptance criteria and scenarios</i></p>	<p>5</p>	<p>Testing Within Project Execution Keeping tests in sync with source code Integrating tests and code within CI environment Suggestions for incorporating CI into an agile project Pitfalls TDD/BDD and CI anti-patterns</p>
<p>3 Continuous Integration (CI) CI definition and concepts Test suite framework CI tools</p>		