ACE IT CAREERS
BEST CAREER BUILDER

TESTING & QA · COURSE SYLLABUS

QA Tester (Manual, Automation & AI Testing)

A U.S. market-aligned QA Tester program that takes you from manual testing in Agile projects to Selenium automation, API testing, CI/CD and BDD, plus AI tools for test design, test data and no-code automation, finishing with a real-time project.

7–8 Weeks | Live online | Placement support

Syllabus

WEEK 1

Manual testing fundamentals

- Testing and its importance in U.S.-based Agile projects
- SDLC models: Agile (Scrum ceremonies), V-Model and Waterfall compared
- STLC and QA documentation: test plan, strategy, metrics and closure
- JIRA for sprint planning, story management and the defect lifecycle
- RTM creation linked to acceptance criteria in user stories
- Types of testing: unit, integration, system, UAT, regression, smoke, sanity and ad-hoc
- Exploratory testing with mind maps and real scenarios

WEEK 2

Advanced manual testing, SQL and tools

- Test metrics, risk management and defect analysis reports
- Hands-on SQL for testers: CRUD, joins, grouping, filtering and subqueries
- Zephyr with JIRA: test cycles, execution and traceability
- Azure DevOps Boards for test management

WEEK 3

Java for QA

- OOP: classes, objects, inheritance, polymorphism, abstraction and interfaces
- Core Java: data types, conditions, loops and arrays
- Excel and JSON test data with Apache POI and Jackson
- Git basics and branching strategy for QA projects
- Java and Eclipse setup for automation projects

WEEK 4

Selenium WebDriver basics

- Locators: absolute and relative XPath, CSS and dynamic strategies
- WebElement actions: sendKeys, click, submit, clear, checkboxes and radio buttons
- Implicit, explicit and fluent waits for asynchronous loading
- Browser windows, tabs, pop-ups and alerts
- Debugging and execution flow control in Eclipse

WEEK 5

TestNG and automation frameworks

- TestNG assertions, groups, parameters, retry analyzer and parallel execution
- Data-driven frameworks with Excel and JSON
- Hybrid framework design: Page Object Model plus utility layer
- Maven: pom.xml setup and dependency management
- GitHub: push, pull, merge requests and code reviews
- Log4j logging, TestNG HTML reports and error handling

WEEK 6

API testing and CI/CD

- Postman: collections, environment variables and assertions
- RestAssured: validations, headers, JSON Path and schema checks
- Jenkins CI/CD: job creation, build triggers and test integration
- Test execution reports and email notifications in Jenkins
- GitHub Actions as a CI alternative

WEEK 7

BDD, database testing and real-time project

- Cucumber BDD: feature files, step definitions, hooks and tags
- JDBC setup and database validation queries
- UI-to-database data validation in end-to-end scenarios
- Live hybrid framework run: UI + API + DB with reporting
- Team collaboration tools for QA: Slack and Trello

AI IN TESTING

AI tools for QA

- Test case design using AI
- Test data preparation using AI
- No-code test automation with testRigor (AI tool)

Included with every course

- Live instructor-led classes in US time zones, with session recordings
- Real-time project work and a certificate
- Resume preparation and marketing, mock interviews and placement support