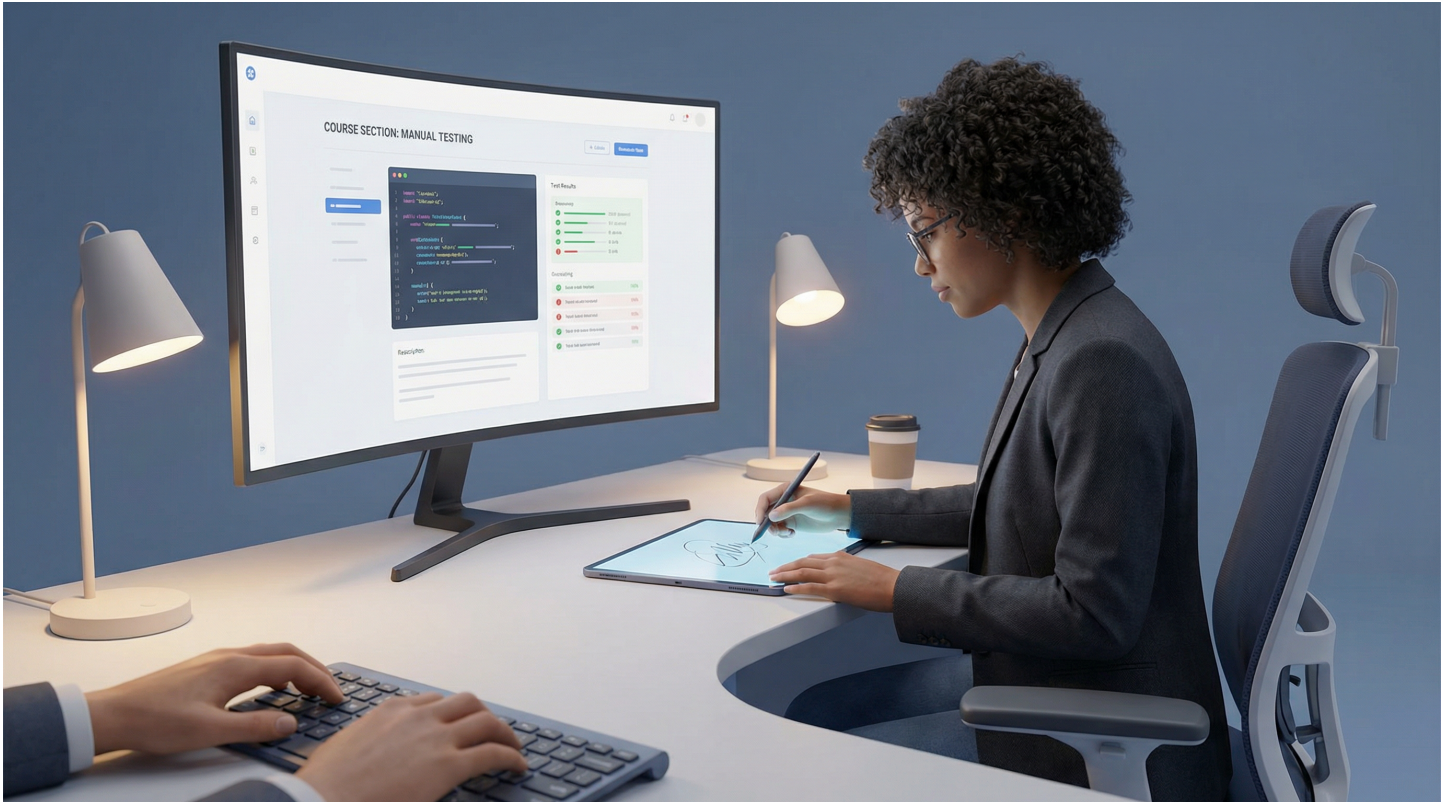# Evolve Tech Academy

Manual Testing Syllabus

1. Fundamentals of Software Testing

Introduction to software testing principles, objectives, and the role of QA in the SDLC. Students learn testing terminology, the psychology of testing, error vs defect vs failure, and the seven testing principles including early testing and defect clustering.

2. Software Development Life Cycle (SDLC) and Testing

Understanding different SDLC models (Waterfall, Agile, V-Model, Iterative) and how testing fits into each. Students learn when testing activities occur, entry/exit criteria, and how to adapt testing approaches to different development methodologies.

3. Test Planning and Strategy

Creating comprehensive test plans, defining test scope, objectives, resources, timelines, and risk assessment. Students learn to develop test strategies, estimate testing effort, and create test schedules aligned with project goals.

4. Requirements Analysis and Testability

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Analyzing functional and non-functional requirements to identify testable components. Students learn to review requirements for completeness, clarity, consistency, and create traceability matrices linking requirements to test cases.

5. Test Design Techniques - Black Box

Mastering black box techniques including Equivalence Partitioning, Boundary Value Analysis, Decision Tables, State Transition Testing, and Use Case Testing. Students practice designing test cases without knowledge of internal code structure.

6. Test Design Techniques - White Box

Understanding white box techniques including Statement Coverage, Branch Coverage, Path Coverage, and Code Complexity analysis. Students learn to design test cases based on code structure and logic flow.

7. Test Case Design and Documentation

Writing clear, effective, and maintainable test cases with preconditions, test steps, expected results, and postconditions. Students learn test case design standards, templates, and best practices for test case management.

8. Exploratory Testing and Session-Based Testing

Performing structured exploratory testing using session-based test management (SBTM). Students learn to create test charters, conduct time-boxed exploration sessions, and document findings effectively while balancing freedom and structure.

9. Defect Life Cycle and Bug Reporting

Understanding defect workflows from identification through closure. Students learn to write detailed bug reports with reproduction steps, severity/priority classification, attach evidence (screenshots/logs), and track defects through their lifecycle.

10. Test Data Management

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Creating, managing, and maintaining test data for different testing scenarios. Students learn data preparation techniques, test data requirements analysis, data privacy considerations, and strategies for positive/negative/boundary test data.

11. Testing Types and Levels

Understanding different test levels (Unit, Integration, System, Acceptance) and types (Functional, Non-functional, Regression, Smoke, Sanity). Students learn when to apply each type and how they complement each other.

12. Database Testing Fundamentals

Performing manual database testing including data integrity checks, CRUD operations validation, and query verification. Students learn basic SQL for testing, data validation techniques, and backend data verification strategies.

13. API Testing with Postman

Testing REST APIs manually using Postman including request/response validation, status code verification, JSON/XML parsing, and creating test collections. Students learn API testing fundamentals, authentication methods, and basic request chaining.

14. Web Application Testing

Testing web applications across different browsers, devices, and platforms. Students learn cross-browser testing, responsive design validation, form testing, navigation testing, and web-specific test scenarios.

15. Mobile Application Testing (Android/iOS)

Manual testing of mobile applications including installation, functionality, usability, interruption testing, and device compatibility. Students learn mobile-specific scenarios like network switching, battery drain, and gesture-based interactions.

16. Usability and User Experience Testing

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Evaluating application usability, accessibility, and user experience. Students learn heuristic evaluation, accessibility standards (WCAG), navigation testing, and creating usability test reports with improvement recommendations.

17. Performance Testing Concepts

Understanding performance testing types (Load, Stress, Spike, Endurance) and key metrics. Students learn to identify performance requirements, recognize performance issues during manual testing, and understand basic performance testing principles.

18. Security Testing Basics

Performing basic security testing including authentication/authorization checks, input validation, SQL injection detection, and XSS vulnerability identification. Students learn OWASP Top 10 vulnerabilities and security testing best practices.

19. Test Execution and Defect Tracking

Executing test cases systematically, recording results, logging defects, and tracking test progress. Students learn to use test management tools (Jira, TestRail, Zephyr), update test execution status, and maintain testing documentation.

20. Regression Testing Strategies

Planning and executing regression test suites to ensure new changes don't break existing functionality. Students learn regression test selection techniques, prioritization strategies, and maintaining regression test packs.

21. Test Metrics and Reporting

Calculating and interpreting test metrics including test coverage, defect density, defect removal efficiency, and test execution progress. Students learn to create status reports, dashboards, and communicate testing progress to stakeholders.

22. Agile Testing and Scrum

Understanding testing in Agile environments including sprint testing, user story testing, and continuous feedback. Students learn Agile testing quadrants, Definition of Done, acceptance criteria validation, and participation in Agile ceremonies.

23. Test Environment and Configuration Management

Setting up and managing test environments, understanding environment dependencies, and configuration management. Students learn environment readiness criteria, smoke testing for environment validation, and troubleshooting environment issues.

24. Quality Assurance Best Practices

Professional QA practices including test process improvement, lessons learned documentation, and quality advocacy. Students learn communication skills, stakeholder management, and contributing to overall software quality improvement initiatives.