

Course Details

Duration: 3 Days

Overview:

Foundation in Software Testing course provides delegates with a comprehensive introduction to software testing techniques. Key areas include:

- ◆ Fundamentals of testing
- ◆ Testing throughout the life cycle
- ◆ Static test techniques
- ◆ Test design techniques
- ◆ Test management
- ◆ Test tools

The objectives of this course are to:

- ◆ prepare candidates for the Foundation Certificate in Software Testing based on the ISTQB syllabus
- ◆ improve understanding of software testing - its purpose and nature - and to raise awareness of issues and constraints around testing
- ◆ provide a widely-recognised professional qualification
- ◆ introduce test techniques (static, white box and black box) to participants as well as providing practical experience of some key techniques
- ◆ learn standard terminology
- ◆ provide a complete picture of the test activities and processes from requirements review to system implementation
- ◆ discover good sources of information

The objectives for the qualification are in the ISTQB syllabus and include:

- ◆ enabling software suppliers to hire certified testers and thereby gain commercial advantage over their competitors by advertising their tester recruitment policy
- ◆ Enabling comparison of testing skills across different countries, testers to move across country borders more easily and multi-national/international projects to have a common understanding of testing issues.

Course Outline

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 - ◆ Common understanding of testing issues.

Course content

The fundamentals of testing

- ◆ Why testing is necessary
- ◆ Harm caused by defects in software; root causes
- ◆ Testing and quality assurance; what testing is
- ◆ General testing principles
- ◆ Fundamental test process and the psychology of testing

Testing throughout the software lifecycle

- ◆ Software development models
- ◆ Relationship between development, test activities and work products in the development life cycle
- ◆ Project and product characteristics and context
- ◆ Test levels, objectives
- ◆ Typical objects and targets of testing
- ◆ Functional, non-functional, structural and change-related testing
- ◆ Confirmation and regression testing
- ◆ Maintenance testing
- ◆ Regression testing and impact analysis in maintenance TITF, AssistKD and TSG

Static techniques

- ◆ Reviews and the test process
- ◆ Software work products and the different static techniques
- ◆ Importance and value of static techniques
- ◆ Difference between static and dynamic techniques
- ◆ Typical formal review process
- ◆ Different types of review: informal review, technical review, walkthrough and inspection
- ◆ Factors for successful performance of reviews
- ◆ Static analysis by tools
- ◆ Defects and errors identified by static analysis
- ◆ Typical benefits
- ◆ Typical code and design defects identified

Test design techniques

- ◆ Identifying test conditions and designing test cases
- ◆ Categories of test design techniques
- ◆ Specification-based (black-box) and structure-based (white-box) approaches
- ◆ Equivalence partitioning, boundary value analysis, decision tables and state transition diagrams
- ◆ Use case testing
- ◆ Structure-based or white-box techniques
- ◆ Code coverage, statement and decision coverage
- ◆ Control flows using statement testing and decision testing
- ◆ Experience based techniques
- ◆ Choosing techniques

Test management

- ◆ Test organization
- ◆ Independent testing
- ◆ Tasks of typical test leader and tester
- ◆ Test planning and estimation
- ◆ 'Standard for Software Test Documentation' (IEEE 829)
- ◆ Typical factors that influence the effort related to testing
- ◆ Estimation approaches (metrics-based and expert-based)
- ◆ Test preparation and execution tasks
- ◆ Exit criteria
- ◆ Test progress monitoring and control
- ◆ Metrics and reporting
- ◆ Configuration management
- ◆ Risk and testing
- ◆ Incident reporting and management

Tool support for testing

- ◆ Types of test tool
- ◆ Effective use of tools
- ◆ Potential benefits and risks
- ◆ Introducing a tool into an organization