

## Software Testing & ISTQB

### Course Content:

1. Software Engineering
  - 1.1 What is Software engineering?
2. Fundamentals of Software Testing
  - 2.1 What is Software Testing?
  - 2.2 Purpose of Software Testing – Why is Software Testing necessary?
    - 2.2.1 Error, Defect (Bug) and Failure
  - 2.3 Principles of Software Testing
  - 2.4 Psychology of Testing
3. Software Development Lifecycle (SDLC)
  - 3.1 Description of Software Development Lifecycle (SDLC)
  - 3.2 Different Software Development Model
    - 3.2.1 Waterfall
    - 3.2.2 V Model
    - 3.2.3 Agile
    - 3.2.4 Dev-ops
4. Test Design Concepts & Exercises
  - 4.1 Documents required for Test Design
  - 4.2 Tools for Test Design
  - 4.3 Design Exercise 1
  - 4.4 Three Points theory to remember always as a Software Engineer or Software Test Engineer
  - 4.5 Design Exercise 2
5. Software Testing Concepts
  - 5.1 Type of Software Testing
    - 5.1.1 Functional
    - 5.1.2 Non-Functional
  - 5.2 Levels of Software Testing
    - 5.2.1 Component Testing
    - 5.2.2 Integration Testing
    - 5.2.3 System Testing
    - 5.2.4 Acceptance Testing
  - 5.3 Testing related to any Changes
    - 5.3.1 Retesting
    - 5.3.2 Regression Testing
  - 5.4 Methods of Software Testing
    - 5.4.1 Black Box Testing
      - 5.4.1.1 Equivalence Partitioning
      - 5.4.1.2 Boundary Value Analysis
      - 5.4.1.3 Decision Table Testing
      - 5.4.1.4 State Transition Testing
      - 5.4.1.5 Use Case Testing
    - 5.4.2 White Box Testing

- 5.4.2.1 Statement Testing and Coverage
    - 5.4.2.2 Decision Testing and Coverage
    - 5.4.2.3 The Value of Statement and Decision Testing
  - 5.4.3 Grey Box Testing or Experienced Based Testing
    - 5.4.3.1 Error Guessing
    - 5.4.3.2 Exploratory Testing or Ad-hoc Testing or Monkey Testing
    - 5.4.3.3 Checklist-based Testing or Priority-based Testing or Risk-based Testing
- 6. Software Testing Lifecycle (STLC)
  - 6.1 Description of Software Testing Lifecycle (STLC)
    - 6.1.1 Requirement Analysis
    - 6.1.2 Test Plan
    - 6.1.3 Test Design & Test Review
    - 6.1.4 Test Environment Setup
    - 6.1.5 Test Execution
    - 6.1.6 Test Closure
  - 6.2 Software Testing process
    - 6.2.1 Test planning
    - 6.2.2 Test monitoring and control
    - 6.2.3 Test analysis
    - 6.2.4 Test design
    - 6.2.5 Test implementation
    - 6.2.6 Test execution
    - 6.2.7 Test completion
  - 6.3 Defect Lifecycle Management
    - 6.3.1.1 Defect Lifecycle
    - 6.3.1.2 Difference between Priority and Severity
- 7. Test Management
  - 7.1 Test Organization
    - 7.1.1 Independent Testing
    - 7.1.2 Tasks of a Test Manager and Tester
  - 7.2 Test Planning and Estimation
    - 7.2.1 Purpose and Content of a Test Plan
    - 7.2.2 Test Strategy and Test Approach
    - 7.2.3 Entry Criteria and Exit Criteria
    - 7.2.4 Test Execution Schedule
    - 7.2.5 Factors Influencing the Test Effort
    - 7.2.6 Test Estimation Techniques
  - 7.3 Test Monitoring and Control
    - 7.3.1 Metrics Used in Testing
    - 7.3.2 Purposes, Contents, and Audiences for Test Reports
  - 7.4 Configuration Management
  - 7.5 Risks and Testing
    - 7.5.1 Definition of Risk
    - 7.5.2 Product and Project Risks
    - 7.5.3 Risk-based Testing and Product Quality
- 8. Type of applications and Testing performed on these
  - 8.1 Applications Type

- 8.1.1 Desktop Application
- 8.1.2 Web Application
- 8.1.3 Mobile Application
- 8.2 Testing Types performed on these
  - 8.2.1 Functional Testing
  - 8.2.2 Non-Functional
    - 8.2.2.1 Usability Testing
    - 8.2.2.2 Security Testing
    - 8.2.2.3 Compatibility Testing
    - 8.2.2.4 Accessibility Testing
    - 8.2.2.5 Performance Testing
      - 8.2.2.5.1 Load Testing
      - 8.2.2.5.2 Stress Testing
- 9. Difference between
  - 9.1 Quality Control & Quality Assurance
  - 9.2 Validation & Verification
  - 9.3 Smoke Testing & Sanity Testing
- 10. SQL Queries used during Software Testing
- 11. Unix Commands used during Software Testing
- 12. LIVE Projects (Test Design, Test Review, Test Execution, Defects Tracking)
- 13. ISTQB Problem Statement & Solution Exercise
  - 13.1 Practice Exercise 1
  - 13.2 Practice Exercise 2
  - 13.3 Practice Exercise 3
  - 13.4 Practice Exercise 4