

## Course Topic- Advance Certificate In Automation Testing

<b>Course Duration</b>	104 Hrs
<b>Course Modularity</b>	30% Theory And 70% Practical
<b>Course Pricing</b>	Rs 11785/-

### Session Plan

#### Module I : Manual Testing

##### DAY 1(8 Hrs)

##### Introduction to Testing

- What is Quality
- What is Testing
- Error, Defect and Failure
- Software Development Life Cycle
- Testing Life Cycle
- Need for Software Testing
- Pre-requisites of Testing
- Testing Methodologies
- Risks
- Risk Analysis
- Economics of Testing

##### Various Levels of Testing

- SDLC vs. TLC Stages
- V- Model of Testing
- Unit Level Testing
- Stubs and Drivers
- Integration Level Testing
- Integration Level Testing Strategy
- Big Bang approach
- Incremental approach
- System Testing
  - Performance Testing
  - Security Testing
  - Recovery Testing
  - Release Testing
  - Documentation Testing
  - Compatibility Testing
  - Configuration Testing
  - Interoperability Testing
  - Verification of User Interface
  
- User Acceptance Testing
  - 1) Alpha testing
  - 2) Beta testing

## **DAY 2(3 Hrs)**

### **Writing Test Cases**

- Use Cases
- Actor
- Scenarios
- Use Case Diagrams
- Test Cases
- Format for Unit Level Testing
- Format for Integration Level Testing
- Format for Defect Report
- Defect reporting
- Defect Tracking
- Severity Levels
- Priority
- Bug Life Cycle
- Traceability Matrix

## **DAY 3(3 Hrs)**

### **Dynamic testing Techniques**

- What is a test technique
- Categories of test design techniques
  - Specification-Based Techniques
  - Structure-Based Techniques
  - Experienced-Based Techniques
- Types of Dynamic techniques
  - Systematic Testing Techniques
  - Functional (Black Box) Testing
  - Structural (White Box) Testing
- Techniques of Black Box Testing
  - Equivalence Partitioning
  - Boundary value analysis
- Coverage Techniques in White Box Testing
  - Statement Coverage
  - Branch/decision Coverage
  - Cyclomatic Complexity (CC)
- Non- Systematic Testing Techniques
  - Experience Based Techniques

## **DAY 4(3 Hrs)**

### **Software Quality Management**

- What is Software Quality
- Quality Management Activities
  - Quality Assurance
  - Quality Planning
  - Quality Control
- Difference between QA and QC
- Verification & Validation

- Software Quality Assurance
  - Audits
- Software Quality Control Reviews
- Inspections
  - Testing
- Type of Reviews
  - INFORMAL or PEER REVIEW / Technical Review
  - SEMIFORMAL or WALKTHROUGH
  - FORMAL or INSPECTION

## **DAY 5(3 Hrs)**

### **Web Testing**

- Types of applications
  - Two-tier applications
  - Three-Tier Architecture or n-tier
- 3-Tier Web Applications
  - Testing Concepts for Web Applications
  - Web Design Quality
- The Web application testing process
  - Web Application Testing Strategy
  - Web Application Test Planning
  - Characteristics of errors in Web Application
- Areas to focus in Testing a Web application
  - Web Content Testing Objectives
  - Database (DB) testing
  - User Interface Testing

### **Test Management**

- Independent Testing (Options for Independence)
  - Levels of independence
  - Benefits and drawbacks of independence
  - Common practices
- Tasks of a test leader
- Tasks of the tester
- Fundamental test process
  - Test Planning and Control
  - Test Analysis and Design
  - Test Implementation and Execution
  - Evaluating Exit Criteria and Reporting
  - Test Closure Activities
- Basic Principles of Testing
- Factors affecting Test Planning
- Test Plan Contents
- Test Planning for Different Software Process Models
  - Waterfall model
  - Iterative development model
    - Prototyping
    - Rapid application development model (RAD)

## **DAY 6(3 Hrs)**

### **Practicals ( Writing Test Cases for Unit Level Testing)**

- Using a case Study
- Unit Level Test Cases- Reviews

## **DAY 7 (8 Hrs)**

### **Practicals (Writing Test cases for Integration Level of Testing)**

- Using a Case Study
- Integration Level Test Cases-Reviews

#### **1. Test Case Execution --Practicals (Creation of a Defect report)**

- Using a Case Study
- Defect report- Review

## **Module II : Winrunner 7.0 (23 Hrs)**

### **Day 8(3 Hrs)**

#### **1. Introduction to Win Runner**

- Drawbacks of Manual Testing
- Benefits of Automated Testing
- Exploring the WinRunner window.
- Testing Process in Win Runner
- Recording of Test Scripts
- Analog recording mode.
- Context sensitive recording mode
- Analyzing the results.
- Creating and Editing GUI Map Files
- Using TSL Functions
- Creating up GUI map
- Understanding the GUI objects
- Spying on GUI objects
- Using Rapid Test Script Wizard.

#### **Practicals**

- Recording Test Scripts
  - Analog Mode
  - Context-Sensitive Mode
    - Using Sample Application

### **Day 9 (3 Hrs)**

- **Data Driver Wizard**
  - Data driven tests

- Creating data driven tests.
- Converting normal tests to data driven tests.
- Creating data pool.

### **Practical—Unit Level Testing ---Using Data Driver Wizard**

#### **Day 10 (3 Hrs)**

##### **Creating Compiled Modules**

- Integration Level Testing using Compiled Modules

##### **Practical – Creating Integration level test Scripts**

- Using an Application – Creating Compiled Modules

#### **Day 11 (8 Hrs)**

##### **File Functions**

- Creating Files
- Using various File functions

##### **Practicals – File functions**

##### **Database Connection**

- Using Functions
- Database Querying
- Database Checkpoints

##### **Practicals—Database Connection**

#### **Day 12 (3 Hrs)**

##### **Synchronizing the tests.**

- Need for synchronization.
- Synchronizing the tests.
- Running the synchronized test.

##### **Practicals—Synchronization**

##### **Web Testing**

- Using various web related Functions
- Bitmap Checkpoint

##### **Practicals—Web Testing**

#### **Day 13 (3 Hrs)**

##### **Regression Testing**

- Inserting GUI Checkpoints

## **Running Scripts in Batch Mode**

Practical—Regression Testing

### **Day 14 Module III : Test Director 8.0(8 Hrs)**

#### **Test Director 8.0**

- Introduction to Test Director
- Creation of a project
- Test Case Designing using TD
- Execution of Win Runner Scripts through TD
- Defect Tracking using TD

### **Day 15 To Day 20**

#### **Practical-Hands On**

#### **Module IV : Live Project**

- Test Case Writing For Integration Level

### **Infrastructure Requirement-**

<b>PC Requirement</b>	P4 or Onwards
<b>Operating System</b>	Windows 2000 or Windows XP
<b>Software's To Be Installed</b>	MS Office, Winrunner, QTP, Loadrunner
<b>Applications To be Installed</b>	Customer Invoicing(Prject4), Hospital Management etc

### **Stationary Requirement-**

- Handouts of ACAT
- Reference Book (Louies Tammer)
- Notepads
- Pens
- Folders
- Course CD
- Case Studies of Student database, Customer Invoicing, Library management