

ADST - ADVANCED DIPLOMA IN SOFTWARE TESTING

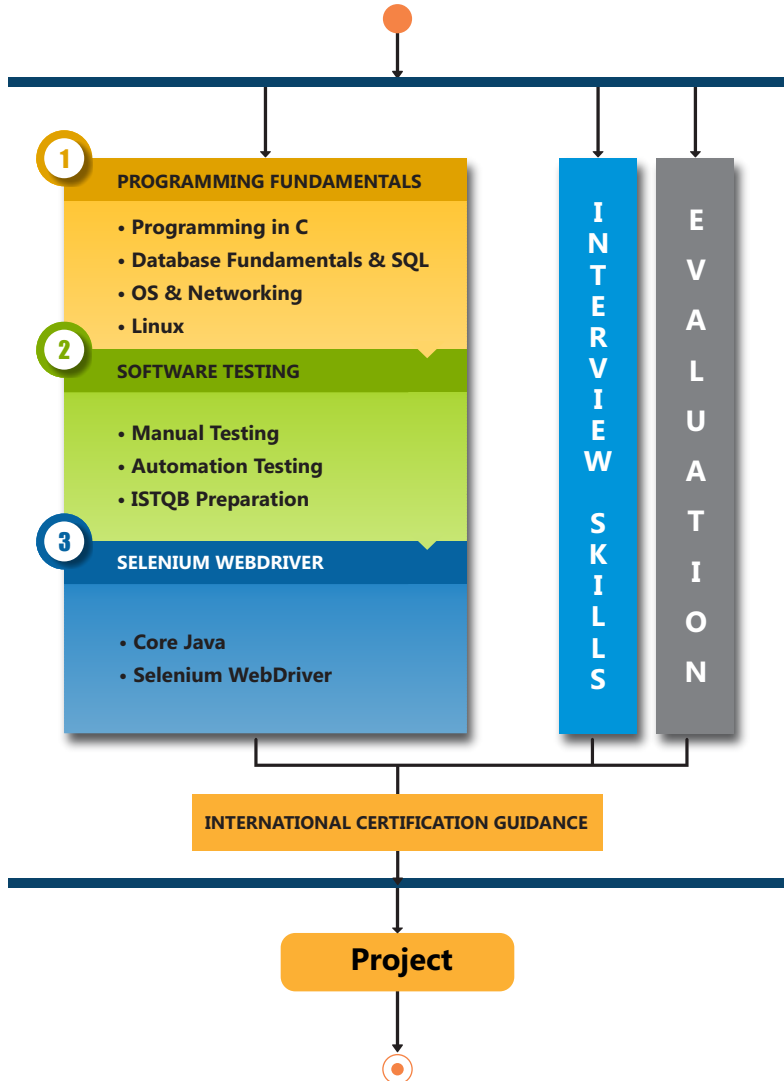
DURATION : 2.5 Months

ELIGIBILITY : BE | BTech | MCA | MCS | MCM | MSc | BCA | BCS | BSc etc

PRE-REQUISITES :

- Basic Knowledge of C Programming.

COURSE OVERVIEW



ADST - COURSE CONTENTS

01- Programming Fundamentals

Programming in C

- Introduction to Programming
- Data Types, Operators
- Integrated Development Environment
- Control Structures
- Functions
- Pointers
- Arrays, Strings
- Structures and Unions
- Command Line arguments

Database Fundamentals & SQL

- Database fundamentals
- Normalization
- SQL / PL-SQL
- Stored Procedure, Function
- Triggers

Introduction to OS & Networking

- Overview of Operating System
- Concept of Process and Thread
- Memory Management
- Network Basics
- Classification of Networks
- Network Topologies
- Network Communication and Protocols
- TCP/IP fundamentals

Linux Fundamentals

- Introduction to Linux
- Basic Commands

02- Software Testing

Introduction to Software Applications

- What is Software Application
- Types of Software Applications
- Components of Software
- One Tier Architecture / Two Tier Architecture / Three Tier Architecture / Multi Tier Architecture
- Application Domains
- Application Models

Software Development Life Cycle

- Phases of SDLC in detail
- Project Team Organization Structure
- Test Team Roles & Responsibilities
- Various Application Issues
- Waterfall Model
- Iterative Model
- Spiral Model
- Agile Model

Introduction to Software Testing

- What is Software Testing ?
- 'V' model in detail
- Verification Techniques
- Reviews
- Inspections
- Walkthrough
- Validation
- Levels of Testing
- Unit Testing
- Integration Testing
- System Testing
- User Acceptance Testing

ADST - COURSE CONTENTS

Software Testing Life Cycle

- Requirements Analysis
- Test Planning
- Test Design
- Test Execution
- Test Closure
- Economics of Testing

Testing Methodologies

- Black Box Testing
 - Advantages & Disadvantages
- White Box Testing
 - Statement Coverage
 - Decision Coverage

• Test Design

- Test Scenarios
 - Creating Test Scenarios from Use Case Diagram
- Test Cases
 - Creation from Test Scenarios
 - Test Case Template
 - Test Case Review
- Requirement Traceability Matrix
- Test Case Management Tool
- Test Data
- Test Data Creation Techniques
 - Boundary Value Analysis
 - Equivalence Class Partitioning
 - Error guessing
 - Decision Table
 - State Transition Testing
- Negative Testing
- Best Practices of Test Design

Test Execution

- Test Environment Setup
- Smoke / Sanity Testing
- Test Case Selection for Execution
- Running Test Cases
- Logging Defects
- Retesting and Regression
- Challenges in Test Execution
- Test Closure Report

Defect Management

- What is a Defect?
- Why do bugs occur?
- Defect Reporting
- Defect Report Template
- Defect Severity & Levels
- Defect Priority & Levels
- Defect Life Cycle
- Defect Tracking Tools
- Defect Prevention

Types Of Non Functional Tests

- User Interface Testing
- Usability Testing
- Localization Testing
- Internationalization Testing
- Accessibility Testing
- Performance Testing
- Load Testing
- Endurance Testing
- Stress Testing
- Configuration Testing
- Compatibility Testing
- Installation Testing
- Security Testing

Quality

- Software Quality Factors
- Quality Management Systems (QMS)
- Quality Assurance (QA) & Quality Control (QC)
- Plan – Do – Check – Act
- Testing Metrics

Skills for a Professional Tester

Automation Testing

A) Selenium

- Overview of Automated testing

ADST - COURSE CONTENTS

- Automation Process
- Scope of Automation
- Benefits of Automation
- Selection of Automation Tool
- Selenium as Automation Tool
 - Why Selenium
 - Selenium
 - IDE, RC, Webdriver, Grid
- Selenium IDE
 - Installation
 - Selenium IDE Menu, Toolbar
 - Editor, Panes
- Recording a Selenium Test Case
- Running a Selenium Script
- Creating Test Suit
- Actions
- Synchronization
- Assertions
- Verification commands
- Debugging
 - Start, Breakpoint, Step
- Regular Expressions

B) TestLink

- Users, Roles and Permissions
- Test Project Management
- Managing project, Modules
- Requirements Management
- Test Plan Management
- Test Cases creation
- Test Suit creation
- Execution of Test Cases
- Reports and Charts

C) Bugzilla

- Users, Roles and Permissions
- Managing project, Modules
- Bug Life Cycle
- Logging a Bug
- Search functionality

D) Unified Functional Testing

- Basic Concepts & Overview (Slides Only)

E) Application Lifecycle Management

- Basic Concepts & Overview (Slides Only)

ADST - COURSE CONTENTS

Java for Selenium

- Introduction To Java:
 - Need Of Java
 - Features Of Java
 - Setting Java Environment
- Working of Java Application:
 - Architecture of Java
 - Loader,JVM,JIT
 - Basic of Java
- OOP's:
 - Class & Object
 - Encapsulation & Abstraction
 - Classes & Methods
 - Instance variable, Constructor,
 - Constructor Overloading
 - Polymorphism methods concept
 - Garbage Collection mechanism
 - Static, Local & Instance concept
 - String in Java, StringBuffer,
 - String Builder
 - Basic API of java.lang,
 - Command line arguments
 - Inheritance and Containment,
 - Object class
 - Method Overriding, Final keyword
- Package Programming:
 - Need of Package
 - User defined package
 - Access specifier
 - Creating .jar
- Utility package:
 - Date,Time.
 - Scanner class
- Exception Handling:
 - Need of Exception
 - Types of Exception
 - Try-catch with different mechanism
 - Finally block
 - Throw & Throws
 - Custom Exception

File Handling

- Collection Framework:
 - Introduction to Collection
 - Set
 - List

Selenium WebDriver

- Introduction - Web Driver:
 - Why Web Driver
- End to End Automation Process with POC (Proof Of Concept)
- Integration - Eclipse + Web driver Installation
- Browser Handling
 - IE
 - Chrome
 - Firefox
 - HTMLUnit
- Object Identification for different web elements using
 - ID
 - Name
 - Class
 - Link
 - Tagname
 - XPath
- FirePath & FireBug Add-ons installations
- Customize Object repository
- Check Points
 - Data (single element, full page)
 - Image (full screen)
- Synchronizations
 - Implicit
 - Explicit
- Performance - Page load time , Internal page navigation
- Mouse / Keyboard events handling
- Handling of Alerts and /Pop Ups
- Handle Window handles

ADST - COURSE CONTENTS

- TestNG
 - What is TestNG
 - Installing TestNG
 - Running a test using TestNG
 - TestNG Report
 - Skipping Test
 - Prioritizing Tests
 - Parameterizing tests
- Introduction to Code management tools (Git hub) / Jenkins
- Execute selenium scripts on Cloud (ex -Browser stack)
- Selenium Grid with TestNG for parallel execution
- Frameworks
 - Data driven Framework
 - Page Object Model

03 - Interview Skills

- Interview Techniques
- Frequently Asked Questions
- Group Discussion
- Resume Writing
- Mock Test Based on MNC Test Pattern

04- Evaluation

- Technical Assignments
- Technical Test
- Technical Interview

05 - Certification

- Preparation for International Certification - ISTQB
- Practice Mock Test

06 - Testing Project

- Manual & Automation Testing