



CREDESCENCE IT PROFESSIONAL TRAINING INSTITUTE, PUNE

Credence - Software Testing Syllabus

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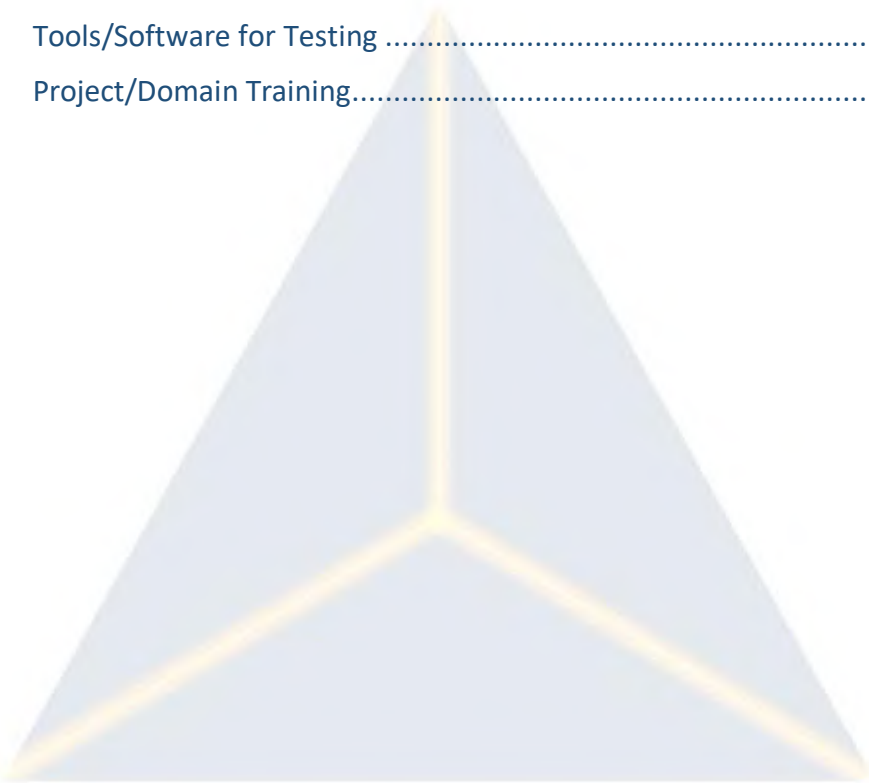
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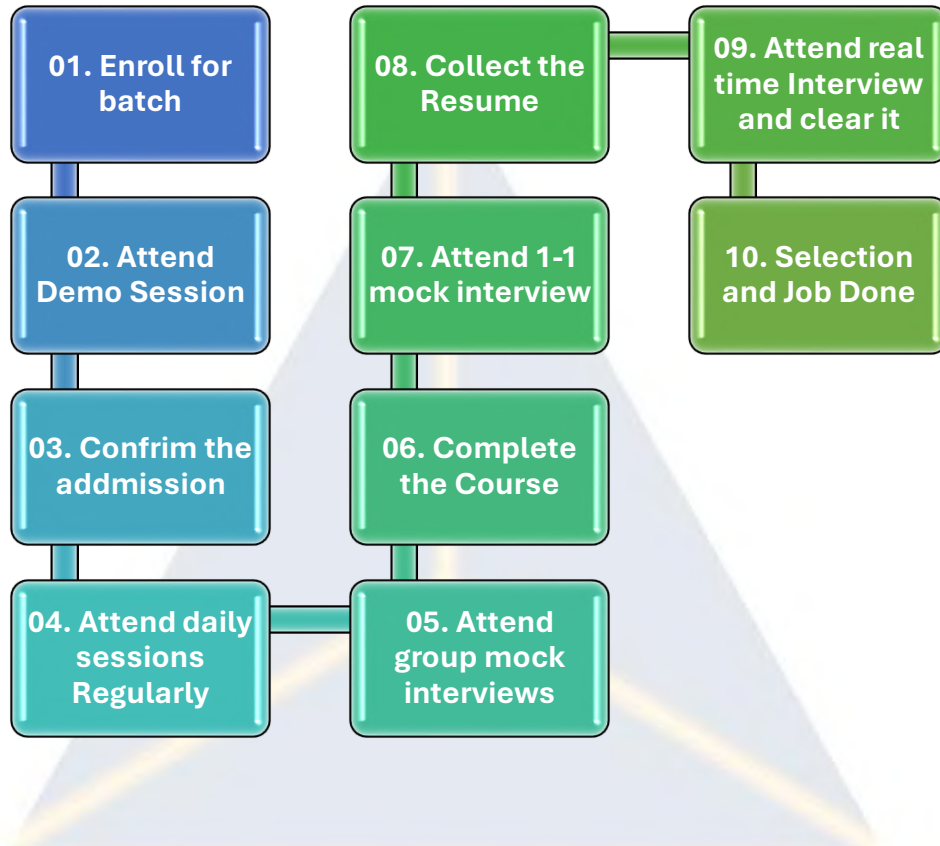
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1. Credence Software Testing Syllabus Process



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2. Introduction to Software

- ▲ **What is Software?**
 - ▲ **Types of Software**
 - System Software
 - Application Software
 - ▲ **Bidding in the Software Industry**
 - ▲ **Organization or Team Structure in the Software Industry**
-

3. Software Development Life Cycle (SDLC)

- ▲ **Introduction to SDLC**
- ▲ **Core Phases of SDLC**
 - Planning Phase
 - Requirement Gathering Phase
 - Design Phase
 - Development Phase
 - Testing Phase
 - Deployment Phase
 - Maintenance Phase
- ▲ **Models in SDLC:**
 - Waterfall Model
 - V Model
 - Incremental Model
 - Spiral Model
 - Agile

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4. Software Testing Fundamentals

- ▲ Introduction to Software Testing
- ▲ Why Testing is Necessary and Important?
- ▲ Why Developers Can't Do the Testing? Why Do We Need Testers?
- ▲ Advantages and Disadvantages of Software Testing
- ▲ What is Error, Defect or Bug, Failure?
 - Reasons and Examples
- ▲ Comparison Table: Defect, Error, and Failure in a Banking Application

5. Testing Levels

- ▲ Unit Testing
 - Basis Path Testing
 - Control Structure Testing
 - Conditional Coverage
 - Loops Coverage
- ▲ Integration Testing Types
 - Incremental Integration Testing
 - Top-Down Integration Testing
 - Bottom-Up Integration Testing
 - Sandwich (Hybrid) Integration Testing
 - Big Bang Integration Testing or Non- Incremental Integration Testing

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▲ System Testing

- Usability
 - GUI Testing
 - Manual Support Testing
- **Functional Testing**
 - Behavioral coverage
 - Input Domain coverage
 - Error handling coverage
 - Backend Coverage
 - Service Level Coverage
 - Calculation based Coverage
- **Non-Functional Testing**
 - Recovering Testing
 - Compatibility Testing
 - Configuration Testing or Hardware Compatibility Testing
 - Inter-System Testing
 - Installation Testing
 - Parallel Testing
 - Globalization Testing
 - Sanitation/Garbage Testing
 - Performance Testing
 - Security Testing

▲ User Acceptance Testing (UAT)

- Alpha Testing
- Beta Testing

6. Testing Terminology

- ▲ Static Testing vs Dynamic Testing
- ▲ Quality Assurance (QA) vs Quality Control (QC)

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- ▲ White Box Testing vs Black Box Testing vs Grey Box Testing
- ▲ Re-Testing and Regression Testing
- ▲ Exploratory Testing
- ▲ Ad-hoc Testing
- ▲ Monkey Testing
- ▲ Comparison Table
- ▲ Positive Testing
- ▲ Negative Testing
- ▲ End-to-End Testing

7. Test Documentation Concepts

- ▲ Test Plan
- ▲ Test Scenarios
- ▲ Test Case
- ▲ Software Testing Life Cycle (STLC) -Sign off email
- ▲ Environments
- ▲ Defect Life Cycle
- ▲ Requirement Traceability Matrix

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8. Project Management Tool (HP ALM & Jira)

- ▲ Writing Test Cases
- ▲ Release/Cycle Management
- ▲ Executing Test Cases
- ▲ Raising Defects
- ▲ Severity and Priority
- ▲ Traceability Matrix
- ▲ Defect Management

9. SQL & Database Concepts

- ▲ **What is Data?**
- ▲ **What is a Database?**
- ▲ **DBMS vs RDBMS**
- ▲ **SQL Overview**
 - SQL Syntax and Tables
 - SQL Data Types
 - Where Clause in SQL
 - Basic SQL Queries
- ▲ **Installation**
 - Oracle Database
 - SQL Developer

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- Oracle DB Online Compiler
- ▲ **SQL Commands and Functions**
- ▲ **DDL, DML, DCL, TCL Commands**
 - Insert, Update, Delete, Select
- ▲ **SQL Operators**
 - Arithmetic, Comparison, Logical Operators
- ▲ **SQL Constraints**
 - Table-Level and Column-Level Constraints (Primary Key, Foreign Key, etc.)
- ▲ **SQL Functions**
 - Aggregate, Character, Date, Conversion Functions
- ▲ **SQL Joins**
 - Inner Join, Left Outer Join, Right Outer Join, Full Outer Join
- ▲ **SQL Clauses**
 - Where, Group By, Having, Order By
- ▲ **Pseudo Columns**
 - Rank(), Dense_Rank(), Rownum, Rowid
- ▲ **Subquery and Aggregation Functions**
- ▲ **Normalization**

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10. Advance SQL

- ▲ Store procedure
- ▲ Trigger
- ▲ Views
- ▲ Materialized views
- ▲ Partition by and group by
- ▲ With clause
- ▲ CTE
- ▲ Coalesce function
- ▲ NVL
- ▲ Case statement
- ▲ Trim / Ltrim / Rtrim
- ▲ Round
- ▲ Cast
- ▲ Pivoting
- ▲ Query optimization concept
- ▲ Date functions
- ▲ Temporary tables
- ▲ Replace
- ▲ Regression expressions
- ▲ ROW_NUMBER(), RANK(), DENSE_RANK(), LAG(), and LEAD()
- ▲ EXISTS and NOT EXISTS
- ▲ Indexing

11. Database types in Syllabus

- ▲ Oracle
- ▲ Microsoft server
- ▲ Azure-Cloud database

12. Database Testing

- ▲ What is Database Testing?
- ▲ Why Do We Do Database Testing?

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- ▲ Benefits of Database Testing
- ▲ Database Testing List
- ▲ SQL Scripts and Where Clause
- ▲ Finding and Deleting Duplicate Data

13. Azure Cloud Concepts

- ▲ What is Cloud Computing?
- ▲ Types of Cloud (PaaS, SaaS, IaaS)
- ▲ Introduction to Microsoft Azure
- ▲ Azure Data Bricks
 - Notebooks, SQL, Cluster, Query Run, Data Loading, Permissions
- ▲ Azure Data Factory
 - Pipeline Creation and Validation, Server Checking, Monitoring
- ▲ Azure Synapse
 - SQL Query, Data Frames, Query Validation
- ▲ Azure DevOps
 - Sprint Creation, Story Creation, Bug Tracking, Link with Story

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14. Perform testing using JMeter

- ▲ What is Performance Testing
- ▲ Types of Performance Testing
 - 1. Stress Testing
 - 2. Load Testing
- ▲ Overview of JMeter (Performance Testing Tool)
- ▲ Test Plan, Threads, Assertions, Listeners, Https request, Http request.
- ▲ Overview of Blaze meter (Automation tool used for Performance testing)
 - 1. How to Generate JMeter script using Blaze meter
 - 2. Automation Test Scenarios
- ▲ Performance Testing on Non-GUI Mode.
- ▲ Performance Dashboard Creation using non-GUI Mode

15. API testing using Postman

- ▲ Overview of Postmen tool (API Testing tool)
- ▲ Types of Request
 - 1. GET Request
 - 2. POST Request
 - 3. PUT Request
 - 4. DELETE Request
- ▲ Login Functionality Testing using Postman
 - 1. No Auth
 - 2. Basic Auth
 - 3. Bearer Token
- ▲ Integration Testing using Postman Tool

16. Salesforce CRM

- ▲ What is Salesforce ?
- ▲ What is Cloud ?

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- ▲ Types of Cloud in Salesforce CRM
- ▲ Sales Cloud, Service Cloud, Commerce Cloud, Analytical
- ▲ Cloud, Experience Cloud, Marketing Cloud
- ▲ Different Terminology in Salesforce
- ▲ What is CRM?
- ▲ Roles and Responsibility of Salesforce Admin
- ▲ Salesforce Reports and Dashboard
- ▲ Lead, Account, Contact & Opportunities
- ▲ UI Testing in Salesforce
- ▲ Trigger Testing in Salesforce7

17. Data Warehousing – ETL + BI Testing

▲ Introduction to Data Warehousing & ETL + BI Testing

- Transactional Vs Analytical System
- Introduction Data Warehouse
- What is Data warehouse?
- What is ETL?
- Data Warehouse Architecture/technical Flow/Data Flow/High level Design (HLD)
- What is Data mart?
- Differences between OLTP and OLAP.
- Table Structure validation/ Metadata Testing and its email communication
- OLTP vs OLAP
- Normalization and De-Normalization
- Relational vs Dimensional Modeling

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- Fact Table and Dimension Table
- Types of Facts and Dimensions
 - Additive, Semi-Additive, Non-Additive Facts
 - SCDs (Slowly Changing Dimensions) Types 0, 1, 2, 3, 4, 6
 - Junk, Conformed, Degenerated Dimensions
- Surrogate Key
- Star Schema, Snowflake Schema, Galaxy Schema
- ▲ **ETL Tools and SQL Server/Oracle IDE**
 - SQL Server Integration Services (SSIS)
 - Informatica, Talend, Query Surge
 - SQL Server Management Studio (SSMS)
- ▲ **ETL and Report Testing**
 - What is ETL Testing and importance of ETL testing
 - Difference between ETL Testing and Database Testing
 - ETL testing scenarios and Test cases
 - Data Mapping Documents/God's Documents/ Data Leakage Documents.
 - Story of EMP_ETL Project.
 - EMP_ETL Project Test Scenarios
 - Queries to Compare Data
 - Live data/Test Data
 - Loading type, Initial, incremental, Full Load

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- ETL Testing Challenges
- Report Testing and Tableau Introduction
- Report Testing Challenges
-

▲ Types of ETL Testing

- Metadata Testing
- Data Completeness Testing
- Data Transformation Testing
- Data Quality Testing

18. Power BI for report Testing

- ▲ Introduction
- ▲ Need to Power BI
- ▲ Testing Aspects
- ▲ Scenario for functional and integration testing
- ▲ Report testing
- ▲ KPI testing
- ▲ Question and Answer

19. Automation Testing

- ▲ Introduction to Automation Testing
- ▲ Python Basic Syntax

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▲ Data Types

- Numbers
- Strings
- Booleans
- Lists
- Tuples
- Sets
- Dictionaries

▲ Variables

- Defining variables
- Variable naming rules
- Constants

▲ Operators

- Arithmetic operators
- Comparison operators
- Logical operators
- Assignment operators
- Membership and identity operators

▲ Control Flow

- Conditional Statements
 - if, elif, else

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- Loops
 - for loop
 - while loop
 - Loop control (break, continue, pass)

▲ Functions

- Defining Functions
 - - Syntax and calling functions
 - - Parameters and arguments
 - - Return values
- Lambda Functions
- Built-in Functions
- Modules and Packages
 - - Importing modules
 - - Creating and using packages

▲ File Handling

- Reading and Writing Files
 - open (), read (), write () methods
 - Working with text and binary files

- File Methods

▲ Exception Handling

▲ Object-Oriented Programming (OOP)

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- Class, Object, Constructor, Methods, Inheritance, Encapsulation, Polymorphism

▲ Selenium Components

▲ Installation of Selenium, Python IDE, and Web Driver Setup

▲ Selenium WebDriver

- **Browser Invocation**

- Chrome
- Firefox
- Edge

- **Locators**

- ID
- Name
- Class Name
- Tag Name
- Link Text
- Partial Link Text
- CSS Selector
- XPath

- **Working With Elements**

- Alert

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- Calendar and Time Picker
- Checkbox
- Click and Hold
- Double Click
- Drag and Drop
- Dropdown
- Element Displayed
- Explicit Wait
- File Upload
- iFrame
- Implicit Wait
- Mouse Hover
- Move by Offset
- Radio Button
- Right Click (Context Click)
- Switch Tab
- Switch Window
- Web Table
- Web Table Fixed Header

20. Automation Testing Framework (PyTest)

▲ What is a Framework?

▲ What is Pytest Framework?

▲ Pytest Framework

- Parallel Run, Markers, HTML Reports
- Integration with Jenkins and GitHub
- Test Case Writing, Conftest File
- Test Data Using Params and Excel-DDT
- Log Generation

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- Allure Reports
 - ▲ Pytest Project - parallel run, markers, html reports
 - ▲ Pytest Project integration with Jenkins
 - ▲ Pytest Project integration with GitHub
 - ▲ Project- standalone code
 - ▲ Project - framework implementation from scratch and folder creation
 - ▲ Project - page objects
 - ▲ Project - test case
 - ▲ Project - conf test file
 - ▲ Project - config file to replace hard values
 - ▲ Project - multiple browser
 - ▲ Project - html reports
 - ▲ Project - parallel run and markers
 - ▲ Project - log generation
 - ▲ Project - test data using params
 - ▲ Project - test data using excel-ddt
 - ▲ Project - allure reports
 - ▲ Project - Jenkins
 - ▲ Project - GitHub

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21. Unix

- ▲ Unix and Linux deference
- ▲ Basic commands in Unix
- ▲ Unix file structure/architecture
- ▲ Create commands for file
- ▲ Open commands for file
- ▲ Copy commands for file
- ▲ Head and tail commands
- ▲ Grep and grep commands
- ▲ SED commands
- ▲ CH mod
- ▲ Find or locate files

22. Tools/Software for Testing

1. SQL Developer
2. SQL server management studio
3. Visual studio +SSIS
4. Tableau
5. HPALM
6. Unix-Putty
7. PyCharm
8. Jira

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9. Git
10. Jenkins
11. Postman
12. JMeter
13. Salesforce CRM
14. Azure Databricks\
15. Notepad ++
16. Excel
17. Outlook

Zoom

23. Project/Domain Training

- ▲ **Telecom Billing/CRM/OSS/Mediation**
- ▲ **Capital Market/Investment Banking**
- ▲ **Healthcare Domain**
- ▲ **Card Payment Systems**
- ▲ **Life Sciences**
- ▲ **Insurance Domain**
- ▲ **Automotive Domain**

Note: 3-4 domain for each batch

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