Manual testing

- What is Testing?
- What is software application , Types of Software Application (Desktop, Web & mobile)
- Types of Organizations
- Type of Domains
- Project & team Members
- Testing Principles
- Testing throughout the software life cycle
- Software development Models (Overview of all models)- SDLC
- Water Fall Model Agile Model, V Shape, Spiral Model (Adv & Dis-adv), Roles.
- Agile and Scrum in Detail
- Fundamental Test Process – STLC
- Requirement Review
- Test Planning
- Test Design
- Test Execution
- Test Report
- Types of testing
- Manual Testing
- White Box
- Black Box
- Grey Box
- Automation testing
- Functional testing
- Smoke & Sanity testing
- Regression and Retesting
- User acceptance testing - Alpha & Beta programs
- Positive testing
- Negative testing
- Explotatory testing
- Localization testing
- Non-Functional testing
- Perfomance testing
- Load testing
- Stress testing
- Endurance testing
- Volume testing
- Compatibility testing
- Accessibility testing
- Defect Management
- Defect Life Cycle
- Defect priority and severity
- Test Metrics
- Test Plan and Test strategy document

API testing

- Client-Server Architecture
- Presentation, Business and Database layers
- What is an API?
- What is API Testing?
- Difference between API testing and Unit testing
- Web services->an introduction
- HTTP Structure
- xml and JSON->an overview
- URI and URL
- Tools for API Testing
- Approach of API Testing
- Challenges of API Testing
- What to test for in API testing
- HTTP methods
- Status codes
- Example APIs
- Introduction to REST Web services.
- What is REST?
  - • Rest Architectural Elements
- REST ASSURED – Basics
- Configure Eclipse with Rest-Assured
- REST API Test using Rest Assured
- Validate Response Status using Rest Assured
- Validate Response Header using Rest Assured
- Read JSON Response Body using Rest Assured
- Difference between SOAP and REST Web services.
- Introduction to SOAP WEBSERVICES
- SOAP UI /READY API BASICS and installation.
- Create a Project, Test Suite, Test Case
- Assertions.
- Introduction to POSTMAN tool and installation.
- Creating requests in Postman.
- Creating collections in Postman.
- Understanding variables and environments in Postman.
- Authorization in POSTMAN
- Assertions/Test scripts in POSTMAN.
- Command line integration with Newman.

Database testing

- Introduction
- What Is Database?
- What is Database Management System (DBMS)?
- What is Relational Model?
- Introduction to RDBMS .
- Brief on E.F CODD .NFR - non-functional requirements – client
- Datatypes and Constraints
- What are Datatypes ?
- Types and Examples .
- How to use .
- What are Constraints?
- Types and Examples.
- How to use.
- Statements in SQL
- Data Manipulation Language (DML)
- Transaction Control Language (TCL)
- Data Control Language (DCL)
- Data Query Language (DQL)
- Software installation   Installing and set up of software
- Working on Oracle 10g.
- Operators
- Types and Examples
- Functions in SQL
- Single Row Functions
- Multi Row Functions
- Max ()
- Min ()
- Sum ()
- Avg ()
- Count ()
- Sub Query
- Introduction to Sub Query
- Working of Sub Query
- Query Writing and Execution
- Types of Sub Query
- Single Row Sub Query
- Multi Row Sub Query
- JOINS   •
- What Is Join?
- Types of Joins.
- Cartesian Join
- Inner Join
- Outer Join
- Self-Join

- Normalization
- Introduction to Normalization
- Types of Normal Forms
- Examples.
- E R Diagrams
- Introduction to ERD
- Examples.

Core Java

Tools used:

- Eclipse IDE
- Selenium
- Maven
- Testing
- Java8
- Browsers – chrome, FF, IE
- Chro path

Automation testing concepts

- What is automation testing
- Why automation needed
- Advantages and disadvantages of using automation
- When to use automation

Core Java

- Setup Java & Eclipse on Windows Machine
- Create First Java Project
- Write First Java Code File & Execute
- Variable & Java Data Types

Conditional Statements in JAVA

- Loops in JAVA
- Java OOPs Concepts
- Constructor in Java
- Static & non static in Java

Object Oriented Programming

- Java Inheritance
- Method Overloading in Java
- Method Overriding in Java
- Super and This Keyword in Java
- Final Keyword in Java
- Abstract Class in Java
- Interface in Java, Access modifiers
- Encapsulation in Java

- Strings in Java
- Exception Handling in Java
- Java Try-Catch Block
- Multi Catch and Nested Try Block
- Finally Block in Java
- Java Collections Framework
- What is Collection Framework
- Iterator in Collection – Enumeration.

Selenium Concepts

- Pre-Requisite & Installation Setup Check and Sample Execution Test for selenium
- Selenium Basis commands - Introduction to Selenium IDE
- Complete details of static and Dynamic XPath in selenium
- Configure Browsers - Firefox, Chrome, and IE
- Introduction to Selenium WebDriver 3
- First Program on selenium
- Verify Page title in Selenium Web driver
- Navigation in selenium
- Radio button and Checkbox in Selenium Web driver
- Handling Drag and Drop in Selenium
- Synchronization using web driver (Waits)
- How to capture Error message using web driver
- Advanced Concepts in Selenium
- Handling drops downs
- Handling Alert Messages
- Handling Frames and Multiple windows
- How to download files in Selenium Web driver
- Taking Screen shot in selenium
- Actions class in selenium
- Handling Web Tables
- Handling Calendar
- Handling Scrolls - Java Script Executor
- POI API - Excel Data Driven Testing
- Handling Resizable Elements
- Handling Keyboard Events
- Handling broken links

Cucumber and BDD

- Gherkin
- BDD + TDD
- Step Definitions
- Reports and Configuration
- Parallel and Sequential
- Page Object Model
- Page Objects
- Page Factory

- Utils

TestNG

- Introduction to TestNG
- Installing TestNG Plug-in in Eclipse
- Testcases Priority
- Annotations
- Grouping
- Sequencing
- Parameterization
- Parallel/Cross Browser Testing
- Introduction to Reports
- Types of Reports
- Rerunning of the failed scenarios
- Dependencies

Maven

- Maven Website
- What is a Build Tool?
- Installing Maven
- Maven POM Files
- Running Maven
- Maven Directory Structure
- Maven Dependencies
- Maven Repositories
- Maven Build Life Cycles, Phases and Goals
- Maven Build Profiles
- Maven Commands

Value added courses.

- Jenkins
- Config
- Reports and Scheduling
- Creation of job in Jenkins for Selenium project integrated with Git Hub and Maven
- Git Hub
- Introduction to GIT
- Branching
- Merging in GIT
- GIT commands

Note : All the topics will be covered with assignments and lab sessions on daily basis.