

I.T.S Engineering College, Greater Noida

Department of Computer Science and Engineering & Allied Branches

SALT LAB SOP

CENTRE OF EXCELLENCE

Empowering Innovation Through Smart Testing

OBJECTIVES

- ✓ Enables students to understand and apply the core concepts of manual software testing.
- ✓ Provides hands-on experience in both manual and automated testing methodologies.
- ✓ Equips students with the ability to test and improve the accuracy and reliability of existing software systems using various testing techniques.
- ✓ Trains students to create and execute test cases and test suites for different software applications.
- ✓ Offers in-depth learning of automation testing using the Selenium tool integrated with Java programming.
- ✓ Guides students through the end-to-end process of developing and testing an application as part of their project work.

COURSES AND TRAINING OFFERED

III YEAR

Semester 5:

1. 6 hours for 5 days training program on basic of Software Testing.
2. 6 hours for a 2 day workshop on Software Testing techniques.
3. Regular training program on Software Testing.
4. Conduct of exam to create test cases and suits for small project, based on software testing.

Semester 6:

1. 6 hours for 5 days workshop program on basics of automation testing tools using java.
2. 6 hours for a 2 day training program on interactive automaton testing.
3. 30 days summer internship on complete Software Testing.
4. Conduct of exam to create interactive test cases based on intermediate level of software testing.

IV YEAR

Semester 7:

1. 1 day workshop on how to prepare for software testing jobs.
2. 2 day training on key skills for software testing.

3. Departmental project development.

Semester 8:

1. Development of Project.
2. Testing of Project Using Selenium tool.

ELIGIBILITY AND PRE-REQUISITES

Eligibility Criteria

- ✓ Open to Undergraduate students (III & IV Year) pursuing B.Tech / B.E. programs in Computer Science, Information Technology, or related disciplines.
- ✓ Students must have successfully completed core programming courses such as Object-Oriented Programming (OOPs), Data Structures, and Database Management Systems (DBMS).
- ✓ Candidates should demonstrate basic analytical and logical reasoning abilities essential for software testing and automation.
- ✓ Enrollment is prioritized for students with an interest in Quality Assurance (QA), Software Testing, and Software Development career paths.
- ✓ Participation in all scheduled workshops, training sessions, and project components is mandatory for successful completion and certification.

Pre-requisites

- ✓ **Fundamental Programming Knowledge:**
 - Proficiency in at least one programming language — preferably **Java** or **Python**.
 - Understanding of basic **algorithms, loops, conditionals, and object-oriented concepts**.
- ✓ **Basic Software Engineering Concepts:**
 - Familiarity with the **Software Development Life Cycle (SDLC)** and **Software Testing Life Cycle (STLC)**.
 - Awareness of **software project documentation**, including requirement and test documentation.
- ✓ **Technical Tools (Preferred Exposure):**
 - Basic understanding of **MySQL** or any relational database system.
 - Awareness of development and testing environments such as **Eclipse IDE, JIRA, or Git/GitHub** (advantageous but not mandatory).
- ✓ **Soft Skills:**
 - Effective communication and teamwork abilities for collaborative project work.
 - Problem-solving mindset and attention to detail — key attributes for testing and debugging software systems.

COURSE TIMELINES AND ROADMAP

III YEAR

5th Semester

5th Semester for CSE	Introductory session: Fundamental of Testing	6 Hours	
	Effective Test Cases Writing	6 Hours	

	Defect reproduction and reporting	6 Hours	TOTAL- 42 Hours
	Types of Testing	6 Hours	
	Testing Techniques (Static & Dynamic)	6 Hours	
	Test Design Techniques and Test Writing (BVA, EP, Decision Table; Statement, Branch and Path Coverage)	6 Hours	
	Quiz/Guest Talk/ Workshop/ Webinar	6 Hours	

6th Semester

6th Semester for CSE	Manual v/s Automation Testing, Different Automation Tools	6 Hours	TOTAL- 42 Hours
	Tool Support for Testing (Selenium IDE)	6 Hours	
	Tool Support for Testing (Selenium Web Driver)	6 Hours	
	Tool Support for Testing (Selenium Web Driver)	6 Hours	
	Tool Support for Testing (Selenium Web Driver)	6 Hours	
	Conceptual Topics-ISTQB View	6 Hours	
	Quiz/Guest Talk/ Workshop/ Webinar	6 Hours	

7th Semester

7th Semester for CSE	Workshop on how to prepare for Software Testing	7 Hours	TOTAL-
7th Semester for CSE	Training on skills for software testing	16 Hours	

7th Semester for CSE	Major Project Development	40 Hours	63 Hours
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8th Semester

8th Semester for CSE	Major Project Continue	20 Hours	TOTAL- 30 Hours
8th Semester for CSE	Practice for Technical Interview	10 Hours	

CERTIFICATIONS OFFERED

Name Of Course	Duration of Course	Content of the Course	Frequency of the Course Quarterly/Annually	Mode of Conduct of the Course Online/ Offline	Brief about the applicability of the course with regard to placement opportunity	Process to apply for the course
SALT	42 Hours	Introductory session: Fundamental of Testing	Quarterly	Online	Basic understanding of software development and testing	https://istqb.org/
		Effective Test Cases Writing				
		Defect reproduction and reporting				
		Types of Testing				
		Testing Techniques (Static & Dynamic)				
		Test Design Techniques and Test Writing (BVA, EP, Decision Table; Statement, Branch and Path Coverage)				
SALT	42 Hours	Manual v/s Automation Testing, Different Automation Tools	Quarterly	Online	Internal assessment of Manual and Automation Testing	https://istqb.org/
		Tool Support for Testing (Selenium IDE)				
		Tool Support for Testing (Selenium Web Driver)				
		Tool Support for Testing (Selenium Web Driver)				
		Tool Support for Testing (Selenium Web Driver)				
		Conceptual Topics- ISTQB View				
SALT	42 Hours	Quiz/Guest Talk/ Workshop/ Webinar	Quarterly	Online	To test the advance concepts of testing	https://istqb.org/
		Workshop on how to prepare for Software Testing				
		Training on skills for software testing				
SALT	42 Hours	Major Project Development	Quarterly	Online		https://istqb.org/
		Major Project Continue				

		Practice for Technical Interview			For placements for QA or SOFTWARE TESTER	
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LAB ACTIVITIES AND GUIDELINES

Lab Activities

✓ Manual Testing Activities

- Understanding **Software Testing Life Cycle (STLC)** and its phases.
- Creation of **Test Plans, Test Scenarios, and Test Cases** for given software modules.
- Execution of **manual test cases** and reporting of defects using tools like **JIRA or Bugzilla**.
- Performing **functional, regression, and integration testing** on sample applications.
- Preparing **Defect Reports** and **Test Summary Reports** for analysis and presentation.

✓ Automation Testing Activities

- Installation and configuration of **Selenium WebDriver** with **Java / Eclipse IDE**.
- Writing and executing **automation scripts** for web-based applications.
- Development of **Test Automation Frameworks** using **TestNG or JUnit**.
- Implementing **cross-browser testing** and **data-driven testing** techniques.
- Integration of **Maven** for project management and **Git/GitHub** for version control.
- Using **Postman** for **API testing** and validation of backend responses.

✓ Project and Internship Activities

- **Mini Projects:** Design, develop, and test small-scale applications to demonstrate manual and automation testing skills.
- **Major Projects:** Execute complete SDLC and STLC workflows—from requirement gathering to deployment and validation.
- **Internships:** Engage in 30-day summer internships with QA/Software Testing organizations or in-house projects.
- **Project Review and Evaluation:** Conduct regular assessments to ensure adherence to testing standards and best practices.

✓ Documentation and Reporting Activities

- Preparation of detailed **Test Documentation** including Test Case Design, Execution Logs, and Result Analysis.
- Maintenance of **Lab Records and Logbooks** for each experiment and project phase.
- Submission of **Weekly Progress Reports** to mentors/instructors for review.
- Presentation of project findings and outcomes during **Lab Evaluation Sessions**.

Lab Guidelines

✓ **General Conduct**

- Students must **report on time** and maintain **discipline and decorum** in the lab.
- Each student should maintain a **Lab Record Book** with neatly documented activities and observations.
- Use of **authorized software tools only** as approved by the lab instructor.
- **No external storage devices** or unauthorized data transfers are allowed without faculty permission.

✓ **Technical Guidelines**

- Ensure all software environments (**Java, Eclipse, MySQL, Selenium, StarUML, JIRA**) are properly configured before starting work.
- Regularly **backup project files** and test data to avoid data loss.
- Follow proper **naming conventions and version control practices** while writing scripts or developing test cases.
- Report any **hardware or software malfunction** immediately to the lab in-charge.

✓ **Safety and Ethics**

- Maintain **data confidentiality** when handling project or client data.
- Avoid plagiarism in reports, code, and project submissions.
- Ensure **ethical testing practices** by following standard QA protocols.
- Handle lab equipment and systems responsibly to prevent damage or misuse.

✓ **Evaluation and Assessment**

- Continuous evaluation based on **attendance, participation, documentation, and project performance**.
- Periodic **practical tests and viva sessions** to assess conceptual and hands-on understanding.
- Final evaluation will include **project demonstration, test documentation review, and oral defense**.

Top Employers: Google, Tata Consultancy Services (TCS), Infosys Technologies, Wipro Limited, Cognizant Technology Solutions, Capgemini, Accenture, IBM, Tech Mahindra, HCL Technologies, DXC Technology, Mindtree, Larsen & Toubro Infotech (LTI), Oracle, Amazon Web Services (AWS), Microsoft.

Contact Information

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Location: SALT Lab, COE, I.T.S Engineering College, Greater Noida