

## SOFTWARE TESTING METHODOLOGIES

<b>Course Code</b>	19CS4702C	<b>Year</b>	IV	<b>Semester</b>	I
<b>Course Category</b>	Professional Elective-V	<b>Branch</b>	CSE	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	Software Engineering, Software Requirements Management
<b>Continuous Internal Evaluation :</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

### Course Outcomes

**Upon Successful completion of course, the student will be able to**

CO1	Understand fundamentals of software testing strategies and principles.	L2
CO2	Apply various software testing strategies to the projects and make an effective report.	L3
CO3	Apply concepts and principles of test suite management for efficient test case generation	L3
CO4	Analyze and choose suitable modern software testing tools for a given project	L4

### Syllabus

<b>Unit No</b>	<b>Contents</b>	<b>Mapped CO</b>
<b>I</b>	<b>Introduction:</b> Software testing definition, evaluation of software testing, software testing myths and facts, goals and model of software testing, software testing terminology, software testing life cycle, testing methodology.	<b>CO1</b>
<b>II</b>	<b>Dynamic testing:</b> Black-Box testing: Boundary value analysis, equivalence class testing. White-box testing: Introduction, basic path testing, loop testing. <b>Static testing:</b> inspections, structured walkthroughs, Technical Reviews	<b>CO1, CO2</b>
<b>III</b>	<b>Validation activities:</b> Module validation testing, integration testing, function testing, system testing, accepting testing. <b>Regression Testing:</b> Objectives of regression testing, regression testing	<b>CO1</b> <b>CO2</b>

	types, regression testing techniques.	
<b>IV</b>	<p><b>Test management:</b> Test organization, structure of testing group, test planning, test design and test specification.</p> <p><b>Efficient test suite management:</b> Introduction, minimizing the test suite and its benefits, defining test suite minimization problem, test suite prioritization, types of test case prioritization, prioritization techniques.</p>	<p><b>CO1</b></p> <p><b>CO3</b></p>
<b>V</b>	<p><b>Automation and Testing Tools:</b> need for automation, categorization of testing tools, selection of testing tools, Cost incurred, Guidelines for automated testing, overview of some commercial testing tools. Testing Object Oriented Software: basics, Object oriented testing</p>	<b>CO1, CO4</b>

<b>Learning Resources</b>
<b>Text Books</b>
1. Software Testing: Principles and Practices, Naresh Chauhan, Second edition, Oxford.
<b>References</b>
1. Software testing techniques, Baris Beizer, Second edition, 2009, International Thomson computer press, DreamTech.
2. Foundations of Software testing, Aditya P Mathur, Second edition, 2013, Pearson.
<b>e-Resources and other Digital Material</b>
1. <a href="https://nptel.ac.in/courses/106/105/106105150/">https://nptel.ac.in/courses/106/105/106105150/</a>
2. <a href="http://www.nptelvideos.in/2012/11/software-engineering.html">http://www.nptelvideos.in/2012/11/software-engineering.html</a>