

**SOFTWARE TESTING METHODOLOGIES**  
(Professional Elective –V)

<b>Course Code</b>	20IT4703C	<b>Year</b>	IV	<b>Semester</b>	I
<b>Course Category</b>	PE 5	<b>Branch</b>	IT	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	Software engineering
<b>Continuous Internal Evaluation :</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

<b>Course Outcomes</b>		<b>Blooms Taxonomy Level</b>
<b>Upon Successful completion of course, the student will be able to</b>		
<b>CO1</b>	Understand the basic concepts of software testing	L2
<b>CO2</b>	Apply Dynamic Testing Techniques and validation activities	L3
<b>CO3</b>	Apply software test management practices	L3
<b>CO4</b>	Gain knowledge on automation testing	L2
<b>CO5</b>	Analyze various testing strategies for a given application (Assignment)	L4

<b>Contribution of Course Outcomes towards achievement of Program Outcomes &amp; Strength of correlations(3:Substantial,2: Moderate,1:Slight)</b>														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>	3												3	
<b>CO2</b>	3												3	
<b>CO3</b>	3												3	
<b>CO4</b>	3												3	
<b>CO5</b>		3							3	3				3

Syllabus		
Unit No	Contents	Mapped CO
I	<b>Introduction to Software Testing:</b> Introduction, evolution of software testing, software testing-Myths and Facts, goals of software testing, Psychology for software testing, Software Testing Definitions, Model of software testing, Effective Software Testing Vs Exhaustive Software Testing, Software Testing Terminology, Software Testing Life Cycle(STLC), Testing methodology.	CO1
II	<b>Dynamic testing: Black-Box Testing Techniques:</b> Boundary value analysis, equivalence class testing. <b>White-box testing:</b> Need of White Box Testing, Logic Coverage Criteria, Basis Path Testing, Loop Testing, Data Flow Testing.	CO1, CO2, CO5
III	<b>Validation activities:</b> Unit validation testing, integration Testing, function Testing, system Testing, acceptance testing. <b>Regression Testing:</b> Progressive Vs Regression Testing, objectives, types, defining regression test problem, regression testing techniques.	CO1, CO2
IV	<b>Test management:</b> Test organization, structure of testing group, test planning, Detailed test design and test specification. <b>Software Metrics:</b> Need of Software Measurement, Definition of Software Metrics, Classification of Software Metrics, Entities to be measured, Size Metrics.	CO1 CO3
V	<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.	CO4

Learning Resources
<b>Text Books</b>
1. Naresh Chauhan, Software Testing: Principles and Practices, 1/e, Oxford University Press, 2010
<b>References</b>
<ol style="list-style-type: none"> <li>1. William E. Perry, Effective Methods for Software Testing, 3/e, Wiley, 2006.</li> <li>2. Paul C. Jorgensen, Software Testing: A Craftsman's Approach, 3/e, Auerbach publication, 2015.</li> </ol>
<b>E- Resources and other Digital Material</b>
<a href="https://www.coursera.org/courses?query=software%20testing">https://www.coursera.org/courses?query=software%20testing</a> <a href="https://nptel.ac.in/courses/106101163">https://nptel.ac.in/courses/106101163</a>