

SOFTWARE TESTING METHODOLOGY

VII Semester: CSE / IT								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
AIT008	Core	3	1	-	4	30	70	100
Contact Classes: 45		Tutorial Classes: 15		Practical Classes: Nil		Total Classes: 60		
<p>OBJECTIVES: The course should enable the students to:</p> <ol style="list-style-type: none"> I. The scope and essentiality of software testing concepts, taxonomy and dichotomies related to software testing. II. The techniques used to test a path, branch, statement coverage of a given software module. III. The techniques and principles in software testing related to transaction flow and statement testing. IV. The hypothesis on the optimized software module used in solving complex problems. <p>COURSE OUTCOMES:</p> <p>CO 1 Explain the concept of software testing objectives, process criteria, strategies and methods related to testing.</p> <p>CO 2 Compare path sensitizing, path instrumentation related to path testing with its importance.</p> <p>CO 3 Classify the key issues and applications in transaction flow testing and data flow testing strategies.</p> <p>CO 4 Explain the basics of data flow testing and the criteria related to data flow testing.</p> <p>CO 5 Make use of domains and paths in order to identify nice and ugly domains in domain testing.</p> <p>CO 6 Translate the path expressions using logic based testing to KV charts and its specifications.</p> <p>CO 7 Develop a defect free module using path products and path expressions.</p> <p>CO 8 Develop applications for path expressions and path products.</p> <p>CO 9 Explain the importance of good state graph and bad state graph related to transition testing.</p> <p>CO 10 Demonstrate state graphs and transition testing with its various testability tips.</p> <p>CO 11 Categorize different testing tools used in testing the applications like banking systems, library management system, hotel management system, etc.</p>								
UNIT-I	INTRODUCTION TO TESTING						Classes: 10	
Introduction: Purpose of testing, dichotomies, model for testing, consequences of bugs, taxonomy of bugs. Flow graphs and path testing: Basics concepts of path testing, predicates, path predicates and Achievable paths, path sensitizing, path instrumentation, application of path testing.								
UNIT-II	TRANSACTION FLOW TESTING						Classes: 08	
Transaction flow testing: Transaction flows, transaction flow testing techniques, dataflow testing, basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.								

UNIT-III	LEVELS OF TESTING	Classes: 09
<p>Domain testing: Domains and paths, nice and ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability.</p> <p>Logic based testing: Overview, decision tables, path expressions, kv charts, and specifications.</p>		
UNIT-IV	PATH PRODUCTS	Classes: 08
<p>Paths, path products and regular expressions: Path products and path expression, reduction procedure, applications, regular expressions and flow anomaly detection.</p>		
UNIT-V	TRANSITION TESTING	Classes: 10
<p>State, state graphs and transition testing: State graphs, good and bad state graphs, state testing, testability tips.</p>		
Text Book:		
Boris Beizer, -Software Testing Techniques, Dreamtech Press, 2 nd Edition, 2003.		
Reference Books:		
<ol style="list-style-type: none"> 1. P. C. Jorgenson, -Software Testing: A Craftmen's Approach, Auerbach Publications, 3rd Edition, 2013. 2. Perry, -Effective Methods of Software Testing, John Wiley, 2nd Edition, 1999. 3. P. Nageswara Rao, -Software Testing Concepts and Tools, DreamTech Press, 2nd Edition, 2007. 		
Web References:		
<ol style="list-style-type: none"> 1. http://www.qatutorial.com/?q=Software_Test_Metrics 2. http://softwaretestingfundamentals.com/unit-testing/ 3. http://qainsights.com/challenges-in-test-automation/ 4. http://www.softwaretestinghelp.com/manual-and-automation-testing-challenges/ 		
E-Text Books:		
<ol style="list-style-type: none"> 1. http://www.softwaretestinghelp.com/practical-software-testing-new-free-ebook-download/ 2. http://www.guru99.com/software-testing.html 3. http://www.fromdev.com/2012/04/8-best-software-testing-books-every-qa.html 4. https://onlinecourses.nptel.ac.in/noc16_cs16/preview 		