Syllabus

SOFTWARE TESTING METHODOLOGIES

Course Code	23CS4601A	Year	III	Semester	II
Course Category	Professional Elective-II	Branch	CSE	Course Type	Elective (Theory)
Credits	3	L – T – P	3-0-0	Prerequisites	Software Engineering
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Understand fundamentals of software testing strategies and principles.	L2
CO2	Apply Transaction Flow, Data Flow software testing strategies to the projects.	L3
CO3	Apply path, transition software testing strategies to the projects	L3
CO4	Analyze and choose suitable modern software testing tools for a given project	L4

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	√												
CO2	√												
CO3	√											√	
CO4		√			√								

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Unit No.	CONTENTS	Mapped CO
I	**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.	CO1,CO4
II	**Transaction Flow Testing:** transaction flows, transaction flow testing techniques. **Data Flow testing:** Basics of data flow testing, strategies in data flow testing.	CO1,CO2, CO4

III	**Domain Testing**: domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability.	**CO1,CO2, CO4**
IV	**Paths, Path products and Regular expressions:** path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection.	**CO1,CO3, CO4**
V	**State, State Graphs and Transition testing:** state graphs, good & bad state graphs, state testing, Testability tips. building tools. (Student should be given an exposure to a tool like Jmeter/selenium/soapUI/Catalon).	**CO1,CO3, CO4**

Learning Resources
Text Books
1. Software Testing techniques - Baris Beizer, Dreamtech, second edition. 2. Software Testing Tools – Dr. K. V. K. K. Prasad, Dreamtech.
Reference Books
1. The craft of software testing - Brian Marick, Pearson Education. 2. Software Testing Techniques – SPD(Oreille) 3. Software Testing in the Real World – Edward Kit, Pearson. 4. Effective methods of Software Testing, Perry, John Wiley. 5. Art of Software Testing – Meyers, John Wiley.
E-Resources & other digital material
https://onlinecourses.nptel.ac.in/noc25_cs66/preview