

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING AND TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec.	Computer Science & Engineering			
Semester	VII				Version	1.0.0.0			
Effective from Academic Year			2025-26		Effective for the batch Admitted in			June 2022	
Subject code	2CSE70E27		Subject Name		Software Testing				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	30	20	50
Pre-requisites:									
Programming, Algorithms, Software Engineering									
Learning Outcome:									
Students successfully completing this course will be able to:									
<ul style="list-style-type: none"> ● Understand Various Software Process models. ● Evaluate various software metrics. ● Analyze Software Configuration and risk management Technique. ● Classify and analyze various software testing techniques. 									
Theory syllabus									
Unit	Content								Hrs
1	Introduction to Software Testing Testing Principles, Best Practices in Testing, Skills for Testing, Various Task Involved In Testing, Difference between Verification & Validation, Difference between QA & QC, Test Strategies for Conventional and Object Oriented Software, Unit Testing, Integration Testing, Validation Testing, Alpha and Beta Testing, System Testing, Recovery Testing, Security Testing, Stress Testing, Performance Testing, Metrics for Source Code, Metrics for Testing, Debugging Process, Debugging Strategies.								8
2	Testing Techniques: Software Testing Fundamentals, Black Box and White Box Testing, Basis Path Testing, Flow Graph Notation, Independent Program Paths, Graph Matrices, Control Structure Testing, Condition Testing, Data Flow Testing, Loop Testing, Graph Based Testing Methods, Equivalence Partitioning, Boundary Value Analysis, Object Oriented Testing Methods: Applicability of Conventional Test Case Design Methods, Fault-Based Testing, Scenario-Based Testing, Random Testing and Partition Testing for Classes, Inter Class Test Case Design.								8
3	Types of Non-functional Testing Security Testing, Recovery Testing, Configuration testing, Compatibility Testing, Installation Testing, Performance Testing, Parallel Testing, Volume Testing, Internationalization Testing, Localization Testing								6
4	Process of Testing Test Planning, Test Analysis, Test Design Construction, and verification, Testing Cycles, Final Testing and Implementation, Post Implementation								6
5	Test Design for Functional Testing Introduction To Test Design, Inputs For Test Design Activity, Test scenarios, Test Cases, Test Case Management, Best Practices Of Test Cases, Test Data, Black Box Test Technique, Requirement Traceability Matrix(RTM)								6

6	Test Execution Test Execution Cycle, Entry Criteria For Test Execution, Smoke /Sanity Testing, Test Execution, Retesting And Regression Testing, Ending The Test Execution Activity, Test Closure Activities	6
7	Defect Management Defect /Bug, Causes For Defect, Defect Reporting, Defect Attributes, Severity And Priority, Defect Life Cycle, Advantages Of Defect Tracking	5
Practical content		
Practicals will be based on the contents covered in the classroom.		
Mooc Course		
Course Name: Software Testing		
Link: https://onlinecourses.nptel.ac.in/noc22_cs61		
Text Books		
1	Software Engineering by Rajib Mall, PHI 2014	
2	Software Testing: A Craftsman's Approach, by Paul C. Jorgensen, Third Edition	
Reference Books		
1	An Integrated Approach to Software Engineering, Second Edition PankajJalote Narosa	
2	Software Engineering: Theory and Practice, Second Edition S.L. Pfleeger, J.M. Atlee Pearson Education	

Course Outcomes:												
Cos	Description											
C01	Understand Various Software Process models.											
C02	Evaluate various software metrics.											
C03	Analyze Software Configuration and risk management Technique.											
C04	Classify and analyze various software testing techniques.											
Mapping of CO and PO:												
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C01	2	0	0	1	1	0	1	0	0	1	0	0
C02	3	2	1	2	3	0	2	1	2	0	2	0
C03	0	0	0	0	3	0	1	0	2	1	2	1
C04	1	0	1	0	3	2	0	0	2	0	3	0