

Branch Name:	IMCA
Program Code:	CS301
Course Name:	Software Testing
Course Code:	1CS3010703T
Pre-requisite Course:	Programming, Algorithms, Software Engineering

Course Objective:

- Understand Various Software Process models.
- Evaluate various software metrics.
- Analyze Software Configuration and risk management Technique.
- Classify and analyze various software testing techniques.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	-	4	60	40	-	-	100

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
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.	12	25
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.	12	25
	Types of Non-functional Testing		

3	Security Testing, Recovery Testing, Configuration testing, Compatibility Testing, Installation Testing, Performance Testing, Parallel Testing, Volume Testing, Internationalization Testing, Localization Testing Process of Testing Test Planning, Test Analysis, Test Design Construction, and verification, Testing Cycles, Final Testing and Implementation, Post Implementation	12	25
4	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) 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	12	25

Text Books:

1. Software Engineering by Rajib Mall, PHI 2014.
2. Software Testing: A Craftsman's Approach, by Paul C. Jorgensen, Third Edition

References 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 Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand Various Software Process models.	3 Applying,
CLO2	Evaluate various software metrics.	2 Understanding, 1 Remembering
CLO3	Analyze Software Configuration and risk management Technique.	4 Analyzing
CLO4	Classify and analyze various software testing techniques.	6 Creating

Mapping of CLOs with Pos & PSOs

Course	Program Outcomes (POs)	Program Specific Outcomes(PS)

Learning Outcomes													Os)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	H	L	L	M	M	L	M	L	L	M	L	L	M	L
CLO2	H	H	M	H	H	L	H	M	H	L	H	L	M	M
CLO3	L	L	L	L	H	L	M	L	H	M	H	M	M	M
CLO4	M	L	M	L	H	H	L	L	H	L	H	L	L	H

H: High, M: Medium, L: Low