



MCA (Master of Computer Applications)
MCA (Master of Computer Applications) Semester II

Course Code	PS02EMCA59	Title of the Course	SOFTWARE TESTING
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To understand software testing process.2. To perform testing activities using modern software tools.3. To prepare test plans and schedules for testing software projects.4. To understand the criteria for test case design.5. To understand structural and functional testing and its types.6. To understand the testing complexity.
--------------------	---

Course Content		
Unit	Description	Weightage* (%)
1.	Basics of Software Testing <ul style="list-style-type: none">- Introduction and need of testing- Basic concepts in testing- Levels of testing- Testing process- Software Testing Life Cycle Model	25
2.	Functional Testing and Structural Testing <ul style="list-style-type: none">- Introduction- Functional (Black Box) testing : Meaning, Techniques - Boundary Value Analysis, Equivalence Class Partitioning, Decision Table Based Testing, Cause-Effect Graphing- Structural (White Box) testing : Meaning, Techniques - Control Flow Testing, Data Flow Testing, Slice Based Testing, Mutation Testing- Black-box Testing Vs. White-box Testing	25
3.	Test Cases <ul style="list-style-type: none">- Test cases – meaning, typical test case parameters, examples- Test case selection criteria- Test case design techniques, Test suite- Generating test cases- Automated test data generation	25





4.	Testing Tools <ul style="list-style-type: none"> - Introduction to testing tools, examples of popular testing tools - Advantages and disadvantages of using testing tools - Types of testing tools - Open source software testing tools 	25
----	--	----

Teaching- Learning Methodology	Blended learning approach incorporating traditional classroom teaching as well as online / ICT-based teaching practices
--------------------------------------	---

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	perform effective software testing.
2.	design effective test cases.
3.	perform test management.
4.	perform structural and functional testing.
5.	reduce testing time and testing complexity.

Suggested References:	
Sr. No.	References
1.	Software Testing - A Craftsman's Approach Paul C. Jorgensen, Third Edition Auerbach Publications, 2013.
2.	Software Testing YOGESH SINGH Cambridge University Press, First Paper





SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))
Syllabus with effect from the Academic Year 2021-2022

	Edition 2012.
3.	Software Quality and Testing By S. A. Kelkar, Prentice Hall of India, 2012.
4.	Software Testing : Principles, Techniques and Tools, M G LIMAYE Tata McGraw-Hill Education Pvt. Ltd., 2011.

