

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E. (Computer Engineering Sp. in Software Engineering) (Full Time)			
Subject Code & Name	Instructions Hours per Week			Credits			
SER2C3 Software Testing & QA	L	T	P	L	T	P	Total
Duration of Theory Paper: 3 Hours	3	1	2	3	1	1	5

Learning Objectives: To develop a skill in developing good quality in the software product.

Pre requisites: Basic knowledge of software Engineering and programming.

COURSE CONTENTS

UNIT-I

SOFTWARE TESTING PRINCIPLES: Need for testing - Psychology of testing - Testing economics – Various software development Life cycles (SDLC) –Principles of testing.

UNIT-II

WHITE BOX TESTING White box testing techniques - Statement coverage - Branch Coverage - Condition coverage - Decision/Condition coverage - Multiple condition coverage - Dataflow coverage - Mutation testing - Automated code coverage analysis

UNIT-III

BLACK BOX TESTING: Black box testing techniques - Boundary value analysis - Robustness testing - Equivalence partitioning -Syntax testing - Finite state testing - Levels of testing – Unit testing- Integration Testing

UNIT-IV

TESTING STRATEGIES: System testing - Functional testing-non-Functional testing-acceptance testing-performance testing –Factors and Methodology for Performance testing, Regression testing-Methodology for Regression-testing.

UNIT-V

ADVANCE SOFTWARE TESTING METHOD (OBJECT ORIENTED TESTING): Syntax testing - Finite state testing - Levels of testing - Unit, Integration and System Testing. Challenges - Differences from testing non-OO Software - Class testing strategies - State-based Testing Software quality Assurance: ISO 9000; CMM and Test Management Issues; Quality Assurance personnel Issues.

Learning Outcomes: To learn to Software Testing & QA concepts and its approaches to software Testing and QA.

BOOKS RECOMMENDED:

- [1]. Srinivasan Desikan&Gopalswamy Ramesh “Software testing Principles and Practices” Pearson education, 2006
- [2]. R. Patton; Software Testing; Techmedia (SAMS) 2000
- [3]. GlenfordJ.Myers, " The Art of Software Testing ", John Wiley & Sons, 1979.
- [4]. Boris Beizer, Black-Box Testing: “Techniques for Functional Testing of Software and Systems ", John Wiley & Sons, 1995.
- [5]. P.C.Jorgensen, “Software Testing - A Craftsman’s Approach ", CRC Press, 1995.
- [6]. Robert V.Binder, " Testing Object-Oriented Systems: Models Patterns and Tools ", Addison Wesley, 2000.