SOFTWARE TESTING

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per sem	Per week	Per sem	Per week	Per sem	
III		ELECTIVE	5	75	5	75	0	0	4

COURSE OBJECTIVE

➢ To learn the criteria for test cases, the design of test cases, test management and test automation techniques.

➢ To apply test metrics and measurements.

COURSE OUTCOME

On successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Explain the basic concepts and the processes that lead to software quality and testing	K2
CO2	Design test cases from the given requirements using Black box testing techniques	K3
CO3	Identify the test cases from Source code by means of white box testing techniques	K3
CO4	Know about user acceptance testing and generate test cases for it	K4
CO5	Develop test cases and test suite using automated testing tools	K3

Knowledge Level – K1-Remember, K2- Understand, K3-Apply, K4-Analyze

MAPPING WITH PROGRAMME OUTCOME

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	M	S
CO2	S	S	S	S	L	M
CO3	S	S	S	S	L	S
CO4	S	S	S	M	S	S
CO5	S	S	S	S	S	S

S- Strong; M- Medium;

SYALLABUS

UNIT – I SOFTWARE QUALITY MANAGEMENT   15 Hrs

Basics of Quality – Core Components of Quality – Software Quality Assurance – Software Quality Control – Total Quality Management – Six Sigma.

UNIT- II FUNDAMENTALS OF SOFTWARE TESTING   15 Hrs

Basics of Software Testing – Test Approaches – Test Planning – Test Strategy – Defects Management.

UNIT - III REQUIREMENTS BASED TEST CASE DESIGN TECHNIQUES   15 Hrs

Equivalence Portioning – Boundary value analysis – Cause effect graphing – Code Based Test Case Generation – Cyclomatic Complexity – CFG Generation – Test Paths Generation – Test case generation from test paths.

UNIT – IV TEST ADEQUACY CRITERIA   **15 Hrs**

The needs for Levels of testing- Unit test planning- Running the unit tests and recording the results- Path Coverage – Statement Coverage – Condition Coverage – Decision Coverage.

UNIT-V AUTOMATED SOFTWARE TESTING   **15 Hrs**

Software test automation- Scope of automation- requirements of a test tool-Test metrics and measurements- Project, Progress and Productivity metrics.

Distribution of Marks: Theory 80% and Applications:20%

TEXT BOOKS

S. NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1	Limaye M.G.,	"Software Testing Principles, Techniques and Tools", Second Reprint	TMH Publishers	2010

REFERENCE BOOKS

S. NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	Alan Gilies,	"Software Quality Theory and Management", 2nd Edition,	Cengage Learning Publishers,	2013
2	Aditya P.Mathur,	"Foundations of Software Testing", 2nd Edition,	Pearson Education,	2013
3	Frank Appel	Testing with JUnit, 1st Edition,	Packt Publishing Limited	2015

4	Lisa Crispin	Agile Testing: A Practical Guide for Testers and Agile Teams	AddisonWesley Professional	2008
5	Cem Kaner,Hung Q Nguyen, Jack Falk	Testing Computer Software	Wiley Publications	1988
6	Glenford J. Myers	The Art of Software Testing	John Wiley & Sons Publications	1979
7	Dorothy Graham, Erik P.W.M. Veenendaal, Rex Black	Foundations of Software Testing	Cengage Learning Publications	2006
8	Paul Jorgensen	Software Testing - A Craftman's Approach	CRC Press	2014

WEB RESOURCES

1. http://www.tutorialspoint.com/softwaretesting/

2. https://www.nptel.in

TEACHING METHODOLOGY

➢ Power point presentation

➢ Seminar by students

➢ Assignment to students

➢ Lecture through video.

➢ Discussion and interaction in class room

SYLLABUS DESIGNER

1. Mrs. G.Sangeetha Lakshmi, Head & Assistant Prof, Dept of Computer Applications

2. Mrs. B. Arulmozhi, Head & Assistant Prof, Dept of Computer Science.

3. Mrs. K. Ayesha, Assistant Prof, Dept of Computer Science.

Mrs. V. Lakshmi Pratha , Assistant Prof, Dept of Computer Science