



SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Master of Computer Applications



MCA Semester III

Subject Name: Software Quality Assurance

Subject Code: MTCA14305

Type of course: Professional Elective Course

Prerequisite: Software Engineering

Rationale: Software Quality Assurance teaches technical and managerial aspects of Quality Software Development and integrating SDLC with Quality Assurance Activities

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
2	1	0	3	60	25	15	00	00	100

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests) **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Content:

Sr. No.	Content	Teaching Hrs.	Module Weightage
1	Introduction to Software Quality and Assurance, Components of SQA The Software Quality Challenge, Software Quality, Software Quality factors, The components of the software quality assurance system –overview, Pre-project Software Quality Components Contract review, Development and quality plans	5	16%



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2	SQA Components in the Project Life Cycle Integrating quality activities in the project life cycle, Reviews	4	13%
3	Software Testing Strategies Software test Classification, White Box Testing, Black Box testing	8	28%
4	Software Testing – implementation – The Testing Process, Test Case Design, Automated Testing, Alpha and Beta site testing programs. Assuring the quality of software maintenance components and external participants contribution, case tools and their effect on software quality	6	20%
5	Software Quality Infrastructure Procedures and work instructions, Staff training and certification, Corrective and preventive actions, Documentation control	3	10%
6	Software Quality Metrics Software Quality metrics, Cost of Quality	4	13%
7	(Tutorial/Practical only) Selenium Webdriver Selenium Web driver commands – Browser commands, Navigation commands, Web element commands, Navigate back/forwards, get, refresh, Locating web elements, Manipulation, Synchronization	15	NA

Suggested Specification table with Marks (Theory/Practical):

Distribution of Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20	20	15	15	15	15

Legends: R: Remembrance, U: Understanding; A: Application, N: Analyze, E: Evaluate C: Create and above Levels (Revised Bloom’s Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.\

Reference Text Books:

Sr. no.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	“Software Quality	Daniel	Pearson	2009	1 st Edition



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	Assurance”	Galin	Publication		
2	Software Testing & Quality Assurance-Theory and Practice	Kshirsagar Naik and Priyadarshi Tripathy	Wiley	2011	1 st Edition
3	Effective Methods for Software Testing	William E. Perry	WILLEY	2006	3 rd Edition

Course Outcome:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	Understanding Software Quality Assurance architecture and its importance	20
CO-2	To create test plan and test cases	15
CO-3	To understand importance of Software Testing for Quality Software	20
CO-4	To Learn different testing strategies	25
CO-5	To learn Software Testing implementation and learn various software quality metrics	20

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO-1	3	3	1	1	3	1	3	1	0	0	1	3			
CO-2	3	3	1	1	3	1	3	1	0	0	1	3			
CO-3	3	3	1	1	3	1	3	1	0	0	1	3			
CO-4	3	3	1	1	3	1	3	1	0	0	1	3			
CO-5	3	3	1	1	3	1	3	1	0	0	1	3			
Rationa															



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Rationale*: Explaining why it is matching this particular program outcome

List of Open learning website:

- <https://www.techbeamers.com/selenium-webdriver-python-tutorial/>
- <https://www.geeksforgeeks.org/selenium-python-tutorial/>
- <https://selenium-python.readthedocs.io/>

List of Open Source Software:

- <https://www.python.org/downloads/>
- <http://seleniumhq.org/download/>