Institute/Department	UNIVERSITY INSTITUTE OF COMPUTING (UIC)	Program	Master of Computer Applications (MC305)
Master Subject Coordinator Name:	Rohini	Master Subject Coordinator E-Code:	E14603
Course Name	Software Testing	Course Code	24CAH-654

Lecture	Tutorial	Practical	Self Study	Credit	Subject Type
0	2	4	0	4.00	T

Course Type	Course Category	Mode of Assessment	Mode of Delivery
Major Elective	Graded (GR)	Hybrid	Hybrid (HYB)

Mission of the Department	M1. To provide innovative learning centric facilities and quality-oriented teaching learning process for solving computational problems. M2. To provide a framework through Project Based Learning to support society and industry in promoting a multidisciplinary activity. M3. To develop crystal clear evaluation system and experiential learning mechanism aligned with futuristic technologies and industry. M4. To provide doorway for promoting research, innovation and entrepreneurship skills in collaboration with industry and academia. M5. To undertake societal activities for upliftment of rural/deprived sections of the society.
Vision of the Department	To be a Centre of Excellence for nurturing computer professionals with strong application expertise through experiential learning and research for matching the requirements of industry and society instilling in them the spirit of innovation and entrepreneurship.

Text Books					
Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	Software Testing	Ron Patton	2nd	Sams	2005
2	Software Quality Assurance	Daniel Galin	2nd	Pearson Education	2003
3	Foundations of Software Testing	Aditya P Mathur	2nd	Pearson Education	2013

Reference Books					
Sr No	Title of the Book	Author Name	Volume/Edition	Publish Hours	Years
1	Testing and Quality Assurance for Component-based Software by Gao, Tsao and Wu Artech House Publishe	Jerry Gao , H.-S. Jacob Tsao , Ye Wu	NA	Artech House Publishers	2003
2	Handbook of Software Quality Assurance	G. Gordon Schulmeyer, James I. McManus	2nd	International Thomson Computer Press	1992

Course OutCome

SrNo	OutCome
CO1	Comprehend the basics of software development life cycle and software testing life cycle
CO2	Discuss static testing and dynamic testing approaches
CO3	Apply different testing techniques to identify and report defects in software applications
CO4	Analyze the relationship between software modules during integration testing.
CO5	Implement the test strategies using JIRA software

Lecture Plan Preview-Theory

Unit No	LectureNo	ChapterName	Topic	Text/ Reference Books	Pedagogical Tool**	Mapped with CO Numer (s)
1	1	CH-1: Software Development Life Cycle	Software Development Life Cycle (SDLC)	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Simulation,Video Lecture	CO1
1	2	CH-1: Software Development Life Cycle	Overview of all SDLC Models	,T-Software Quality Assurance,T-Software Testing ,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	3	CH-1: Software Development Life Cycle	SDLC Models: Waterfall Model, V Model	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT	CO1
1	4	CH-1: Software Development Life Cycle	SDLC model: Agile Model, Rapid Application Development	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	5	CH-1: Software Development Life Cycle	SDLC Model: Spiral Model, Iterative Model	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	6	CH-1: Software Development Life Cycle	Impact of software bugs	,T-Software Quality Assurance,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	7	CH-1: Software Development Life Cycle	Objective of testing, Testing principles and Manual versus Automated Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	8	CH-1: Software Development Life Cycle	Software Testing Life Cycle	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A	PPT,Video Lecture	CO1
1	9	CH-1: Software Development Life Cycle	Establishing test policy, test factors, and eleven steps of software testing process	,T-Software Quality Assurance,T-Software Testing ,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	10	CH-1: Software Development Life Cycle	Testing documentation using IEEE829, Test plan and Test Report,	,T-Foundations of Software Testin,T-Software Quality Assurance,R-Handbook of Software Quality A	PPT,Video Lecture	CO1
1	11	CH-1: Software Development Life Cycle	Test Metrics	,T-Foundations of Software Testin,T-Software Quality Assurance,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	12	CH-1: Software Development Life Cycle	Traceability Matrix Roles & Responsibilities of Quality Assurance Engineer	,T-Foundations of Software Testin,T-Software Testing ,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	13	CH-1: Software Development Life Cycle	Test Levels (Unit, Component, Module, Integration, System, Acceptance, Generic)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO1

1	14	CH-1: Software Development Life Cycle	Software testing pyramid	,T-Software Quality Assurance,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO1
1	15	CH-1: Software Development Life Cycle	Top-down Testing vs Bottom-up Integration Testing	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4
2	16	CH-2: Static Testing	Static Testing: Structured Group Examinations	,T-Foundations of Software Testin,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	17	CH-2: Static Testing	Static Testing: Static Analysis, Determining Metrics	,T-Foundations of Software Testin,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	18	CH-2: Static Testing	Dynamic Testing: Black Box Testing (Equivalence Class Partitioning)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	19	CH-2: Static Testing	Dynamic Testing: Black Box Testing (Boundary Value Analysis)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	20	CH-2: Static Testing	Dynamic Testing: Black Box Testing (Cause-Effect Graphing)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	21	CH-2: Static Testing	Dynamic Testing: Black Box Testing (Decision Table Technique)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	22	CH-2: Static Testing	Functional Testing vs. Structural Testing	,T-Foundations of Software Testin,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT	CO3
2	23	CH-2: Static Testing	Dynamic Testing: White Box Testing (Statement Coverage,Statement Branch)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	24	CH-2: Static Testing	Dynamic Testing: White Box Testing (test of conditions,Path Coverage)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	25	CH-2: Static Testing	Dynamic Testing: Gray Box Testing	,T-Foundations of Software Testin,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	26	CH-2: Static Testing	Intuitive and Experience, Risk-Based Testing	,T-Foundations of Software Testin,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
2	27	CH-2: Static Testing	Acceptance Testing: Alpha, Beta Testing	,T-Software Quality Assurance,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
2	28	CH-2: Static Testing	Performance, Load and Stress Testing, Smoke Testing, Mutation Testing	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO2
2	29	CH-2: Static Testing	Key Performance Indicator (KPI's) of software testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
2	30	CH-2: Static Testing	Key Performance Indicator (KPI's) of software testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
3	31	CH-3: Introduction to JIRA	Introduction To JIRA	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5

3	32	CH-3: Introduction to JIRA	Test Management In JIRA	,T-Foundations of Software Testin,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	33	CH-3: Introduction to JIRA	Advanced Search and Introduction to JQL (JIRA Query Language)	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	34	CH-3: Introduction to JIRA	Different types of issues in JIRA (sub-task, bug, epic, improvement, new feature, story, task)	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	35	CH-3: Introduction to JIRA	Jira Dashboards	,T-Software Quality Assurance,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	36	CH-3: Introduction to JIRA	Different methods for creating issue	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4
3	37	CH-3: Introduction to JIRA	Difference between Defect and Bug	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
3	38	CH-3: Introduction to JIRA	Defect Life Cycle	,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
3	39	CH-3: Introduction to JIRA	Defect Tracking Tools	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	40	CH-3: Introduction to JIRA	Create a Bug Report , Severity & Priority	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	41	CH-3: Introduction to JIRA	Logging defects in JIRA Work Flows	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	42	CH-3: Introduction to JIRA	Plug-ins in JIRA	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	43	CH-3: Introduction to JIRA	Use of Clone and Link in JIRA	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	44	CH-3: Introduction to JIRA	Export and import data in Jira with different formats	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	45	CH-3: Introduction to JIRA	Different types reports (Agile, Issue Analysis, Forecast & Management, etc.)	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4

Lecture Plan Preview-Practical					
Unit No	ExperimentNo	Experiment Name	Text/ Reference Books	Pedagogical Tool**	Mapped with CO Numer(s)
1	1	1.1: Design at least ten test cases to test the user interface of any website.	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	Activity,PPT	CO3
1	2	1.1: Design at least ten test cases to test the user interface of any website.	,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	Activity,PPT	CO3
1	3	1.2: Write a test script using unit testing framework for addition, subtraction, multiplication and division of two numbers.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
1	4	1.2: Write a test script using unit testing framework for addition, subtraction, multiplication and division of two numbers.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
2	5	2.1: Demonstrate the process of testing SOAP APIs using SoapUI, a widely-used tool for functional, regression, and load testing of web services.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO5
2	6	2.1: Demonstrate the process of testing SOAP APIs using SoapUI, a widely-used tool for functional, regression, and load testing of web services.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4
2	7	Lab MST	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3
2	8	2.2:USe Rest API using POSTMAN for API testing and development	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
2	9	2.2:USe Rest API using POSTMAN for API testing and development	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	10	3.1: Using Selenium IDE, create automated test scripts for any of the web applications, execute them, and analyze the results.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	11	3.1: Using Selenium IDE, create automated test scripts for any of the web applications, execute them, and analyze the results.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5

3	12	3.1: Using Selenium IDE, create automated test scripts for any of the web applications, execute them, and analyze the results.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO5
3	13	3.2: Using Selenium IDE, Set up a test environment, create test scripts, execute them, and analyze the results for any university's portal.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4
3	14	3.2: Using Selenium IDE, Set up a test environment, create test scripts, execute them, and analyze the results for any university's portal.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4
3	15	3.2: Using Selenium IDE, Set up a test environment, create test scripts, execute them, and analyze the results for any university's portal.	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT	CO4
3	16	Mini Project 1(Rubric 1: Project Title) Combine Manual and Automation Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	17	Mini Project 1(Rubric 2 : Design and Implementation) Combine Manual and Automation Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	18	Mini Project 1(Rubric 2 : Design and Implementation) Combine Manual and Automation Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	19	Mini Project 1(Rubric 2 : Design and Implementation) Combine Manual and Automation Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	20	Mini Project 1(Rubric 3 : Online Platform) Combine Manual and Automation Testing	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	21	Mini Project 2(Rubric 1 : Project Title) Testing Application Vulnerabilities Using Faulty Injection	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	22	Mini Project 2(Rubric 2 : Design and Implementation) Testing Application Vulnerabilities Using Faulty Injection	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT	CO3,CO4

LECTURE PLAN

3	23	Mini Project 2(Rubric 2 : Design and Implementation) Testing Application Vulnerabilities Using Faulty Injection	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	24	Mini Project 2(Rubric 2 : Design and Implementation) Testing Application Vulnerabilities Using Faulty Injection	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO3,CO4
3	25	Mini Project 2(Rubric 3 : Online Platform Testing Application Vulnerabilities Using Faulty Injection	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT	CO3,CO4
3	26	Mini Project 3 (Rubric 1: Project Title) Cross-Platform Tool to Build, Test and Package Software	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4,CO5
3	27	Mini Project 3 (Rubric 2: Design and Implementation) Cross-Platform Tool to Build, Test and Package Software	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4,CO5
3	28	Mini Project 3 (Rubric 2: Design and Implementation) Cross-Platform Tool to Build, Test and Package Software	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4,CO5
3	29	Mini Project 3 (Rubric 2: Design and Implementation) Cross-Platform Tool to Build, Test and Package Software	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4,CO5
3	30	Mini Project 3 (Rubric 3: Online Platform) Cross-Platform Tool to Build, Test and Package Software	,T-Foundations of Software Testin,T-Software Quality Assurance,T-Software Testing ,R-Handbook of Software Quality A,R-Testing and Quality Assurance	PPT,Video Lecture	CO4,CO5

Assessment Model			
Sr No	Assessment Name	Exam Name	Max Marks
1	24HYB02	Practical Evaluations	40
2	24HYB02	End Term Hybrid Theory	60
3	24HYB02	Attendance Marks	2
4	24HYB02	Surprise Test	12
5	24HYB02	Practical MST	10
6	24HYB02	MST-1 Hybrid	20
7	24HYB02	MST-2 Hybrid	20
8	24HYB02	Assignment/STP	10
9	24HYB02	Quiz/Test	4

10	24HYB02	PBL/CASE STUDY	10
11	24HYB02	Mini-Project/EXL	5
12	24HYB02	Practical Worksheet - 1	30
13	24HYB02	Practical Worksheet - 2	30
14	24HYB02	Practical Worksheet - 3	30
15	24HYB02	Practical Worksheet - 4	30
16	24HYB02	Practical Worksheet - 5	30
17	24HYB02	Practical Worksheet - 6	30