COURSE PLAN

Department	:	Computer Science & Engineering
Course Name & code	:	Software Testing and Analysis & CSE4020
Semester & branch	:	VII & CSE
Name of the faculty	:	Ganesh Babu C, Priya Kamath B
No of contact hours/week:		3 0 0 3

ASSESSMENT PLAN

Course Outcomes (COs)

	At the end of this course, the student should be able to:	No. of Contact Hours	Marks
CO1:	Ability to understand the fundamentals of testing	3	10
CO2:	Ability to design test cases using functional testing techniques	10	27
CO3:	Ability to perform control and data flow testing	10	27
CO4:	Ability to assess test adequacy and perform test selection	7	19
CO5:	Ability to perform unit and integration test	6	17
	Total	36	100

Components	Surprise Quizzes	Sessional Tests	End Semester/ Make-up Examination
Duration	20 to 30 minutes	60 minutes	180 minutes
Weightage	20 % (4 X 5 marks)	30 % (2 X 15 Marks)	50 % (1 X 50 Marks)
Typology of Questions	Understanding/ Comprehension; Application; Analysis; Synthesis; Evaluation	Knowledge/ Recall; Understanding/ Comprehension; Application	Understanding/ Comprehension; Application; Analysis; Synthesis; Evaluation
Pattern	Answer one randomly selected question from the problem sheet (Students can refer their class notes)	MCQ: 10 questions (0.5 marks) Short Answers: 5 questions (2 marks)	Answer all 5 full questions of 10 marks each. Each question may have 2 to 3 parts of 3/4/5/6/7 marks
Schedule	4, 7, 10, and 13th week of academic calendar	Calendared activity	Calendared activity
Topics Covered	Quiz 1 (L 1-9 & T -) **(CO 1)** Quiz 2 (L **6-17** & T -) **(CO 2 &3)** Quiz 3 (L 18-24 & T -) **(CO 3 &4)** Quiz 4 (L 25-33 & T -) **(CO 5)**	Test 1 (L 1-13 & T -) **(CO 1&2)** Test 2 (L 14-30 & T -) **(CO 3&4)**	Comprehensive examination covering full syllabus. Students are expected to answer all questions **(CO 1-5)**

Course Plan

L. No./ T. No.	Topics	Course Outcome Addressed
L0	Introduction	CO
L1	Humans, Errors and Testing, Software Quality	CO1
L2	Requirements, Behavior and Correctness	CO1
L3	Correctness versus Reliability, Testing and Debugging	CO1
L4	Boundary Value Analysis, Robustness Testing	CO2
L5	Worst Case Testing, Special Value Testing	CO2
L6	Random Testing, Guidelines for Boundary Value Testing	CO2
L7	Equivalence Classes	CO2
L8	Types of Equivalence Class Testing	CO2
L9	Types of Equivalence Class Testing (Contd)	CO2
L10	Decision Tables	CO2
L11	Decision Tables (Contd)	CO2
L12	Test Cases based on Decision Tables	CO2

L13	Test Cases based on Decision Tables (Contd)	CO2
L14	Test adequacy basics	CO3
L15	Statement and block coverage	CO3
L16	Decision coverage, Condition coverage	CO3
L17	Multiple condition coverage	CO3
L18	Data flow concepts: Definitions and uses	CO3
L19	C-use and p-use, Dataflow graph	CO3
L20	Def-clear paths, Def-use pairs & paths	CO3
L21	Adequacy criteria based on data flow	CO3
L22	c-use coverage, p-use coverage	CO3
L23	All-uses coverage	CO3
L24	Test Adequacy assessment	CO4
L25	Mutation and Mutants	CO4
L26	Test Assessment using Mutation	CO4
L27	Test Assessment using Mutation	CO4
L28	What is regression testing	CO4
L29	Regression Test Process	CO4
L30	Selecting Regression Tests	CO4
L31	Introduction to Unit Testing, Context, Test Design	CO5
L32	Using JUnit	CO5
L33	Stubs and Mocks	CO5
L34	Tools for Unit Testing	CO5
L35	Introduction to Integration testing, Integration errors, Dependence	CO5
L36	OO Versus Non-OO programs, Integration Hierarchy	CO5

References:

1.	Aditya P Mathur Foundations of Software Testing, , Second Edition, Pearson Education, 2008
2.	Paul C. Jorgensen Software Testing A Craftsman's Approach, 3rd Edition, 2013
3.	Mauro Pezze, Michal Young, Software Testing and Analysis: Process, Principles and Techniques –, John Wiley & Sons, 2008
4.	Gopalaswamy Ramesh, Srinivasan Desikan , Software testing Principles and Practices –, 2nd Edition, Pearson, 2007
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Submitted by: Ganesh Babu C & Priya Kamath B

(Signature of the faculty)

Date: 20-07-2018

Approved by: Dr. Ashalatha Nayak

(Signature of HOD)

Date: 28-07-2018

FACULTY MEMBERS TEACHING THE COURSE (IF MULTIPLE SECTIONS EXIST):

FACULTY	SECTION	FACULTY	SECTION
Ganesh Babu C	E	Priya Kamath B	F