COURSE TITLE	**SOFTWARE TESTING**
COURSE CODE	**01CT0827**
COURSE CREDITS	**3**

Objective:

1 The Objective of this course is to give students an understanding of fundamental principles and processes of software testing. Students will learn about creation of test cases and run them using an automated testing tool. They will also be able to write and recognizing good test cases, including input data, and expected outcomes.

Course Outcomes: After completion of this course, student will be able to:

1 Understanding the goal of testing

2 Use appropriate test terminology in communication, specifically: test fixture, logical test case, concrete test case, test script, test oracle, and fault

3 Measure test adequacy using statement and branch coverage

4 Assess the fault-finding effectiveness of a functional test suite using mutation testing

5 Understand black-box and white-box testing, describing the benefits and use of each within the greater development effort

6 Craft unit and integration test cases to detect defects within code and automate these tests using JUnit.

Pre-requisite of course: Basic knowledge of OOP.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	**Module** Introduction, challenges of software testing, Test, Automation: Using a test framework, Automation: Writing JUnit tests, Testing Foundations, Dependability Definitions, Testing Principles, The "V Model" of Software Development, Validation and Verification in the "V Model", Structural Testing, Mutation Testing, Test Plan, Stages of Software Testing Process, Risk-based Test Planning, Software Defect Reports: Analysis and Report, Software Defect Reports: Track, Retest, and Close, Test Doubles: Introduction, Test Doubles: Input, Test Doubles: Output, Assessing Adequacy and Code Coverage Analysis with JaCoCo, Flakey Tests and How to Avoid Them. Web and Mobile Testing with Selenium.	42
Total Hours		**42**

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DR. RAJENDRASINH BAHADURSINH JADEJA
Digitally signed by (Name of Dean/ Principal)

Textbook :

1 Software Engineering :Principal and Practice , Shrinivasan Desikan , PEARSON publisher, 2005

References:

1 Software Engineering :Principal, Techniques , Software Engineering :Principal, Techniques , Limaye M. G., TATA McGraw Hill Education , 2007

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
10.00	20.00	40.00	30.00	0.00	0.00

Instructional Method:

1 Students may use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory, etc

Supplementary Resources:

1 MOOC Course, NPTEL, COURSERA, Udemy, Infosys, Springboot, SWYAM etc. Online learning platform

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