

ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY: CHIRALA
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

LESSON PLAN

SUBJECT: Software Testing Methodologies

Academic Year: 2017-18

Name: G. PRASUNA

Year&Sem/Section: IV-I/C

No. of Lectures per week : 4+1* (Tutorial)

Sl No/Unit	Topic	No of Classes
I	<p>Software Testing: Introduction, Evolution, Myths & Facts, Goals, Psychology, Definition, Model for testing, Effective Vs Exhaustive Software Testing.</p> <p>Software Testing Terminology and Methodology: Software Testing Terminology, Software Testing Life Cycle, relating test life cycle to development life cycle, Software Testing Methodology.</p>	11
II	<p>Verification and Validation: Verification & Validation Activities, Verification, Verification of Requirements, High level and low level designs, How to verify code, Validation</p> <p>Dynamic Testing I: Black Box testing techniques: Boundary Value Analysis, Equivalence class Testing, State Table based testing, Decision table based testing, Cause-Effect Graphing based testing, Error guessing</p>	12
III	<p>Dynamic Testing II: White-Box Testing: need, Logic coverage criteria, Basis path testing, Graph matrices, Loop testing, data flow testing, mutation testing</p> <p>Static Testing: Inspections, Structured Walkthroughs, Technical reviews</p>	5
IV	<p>Validation activities: Unit testing, Integration Testing, Function testing, system testing, acceptance testing</p> <p>Regression testing: Progressives Vs regressive testing, Regression testability, Objectives of regression testing, When regression testing done?, Regression testing types, Regression testing techniques</p>	8
V	<p>Efficient Test Suite Management: Test case design. Why does a test suite grow, Minimizing the test suite and its benefits, test suite prioritization, Types of test case prioritization, prioritization techniques, measuring the effectiveness of a prioritized test suite</p> <p>Software Quality Management: Software Quality metrics, SQA models</p> <p>Debugging: process, techniques, correcting bugs, Basics of testing management tools, test link and Jira</p>	8
VI	<p>Automation and Testing Tools: need for automation, categorization of testing tools, selection of testing tools, Cost incurred, Guidelines for automated testing, overview of some commercial testing tools.</p> <p>Testing Object Oriented Software: basics, Object oriented testing</p> <p>Testing Web based Systems: Challenges in testing for web based software, quality aspects, web engineering, testing of web based systems, Testing mobile systems</p>	7
Total Classes Required		51

Text Books:

1. Software Testing, Principles and Practices, Naresh Chauhan, Oxford
2. Foundations of Software testing, Aditya P Mathur, 2ed, Pearson
3. Software Testing- Yogesh Singh, CAMBRIDGE

Reference books:

1. Software testing techniques - Baris Beizer, International Thomson computer press, second edition.
2. Software Testing, Principles, techniques and Tools, M G Limaye, TMH
3. Effective Methods for Software testing, Willian E Perry, 3ed, Wiley

FACULTY MEMBER**HEAD OF THE DEPARTMENT**

SACET CSE