

SOFTWARE TESTING

(ELECTIVE-1)

(Common to CSE & IT)

Course Code : 13CT1125

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Pre-Requisite: Software Engineering

Course Educational Objectives:

The main objective of the course is to expose the students how to test the large scale projects module wise, program wise. Also to give awareness to the student how to validate a particular program with proper and improper inputs. Upon completion of this course, the student should be able to:

- ❖ Determine software testing objectives and criteria.
- ❖ Develop and validate a test plan.
- ❖ Select and prepare test cases.
- ❖ Studying various testing methodologies.
- ❖ Prepare testing policies and standards.

Course Outcomes:

At the end of the course the student will be able to

- ❖ Understand Creating An Environment Supportive Of Software Testing.
- ❖ Understand the Flow Graphs, Data flow & Path Testing.
- ❖ Understand the Domain Testing.
- ❖ Understand the Logic Based Testing.
- ❖ Understand the way of testing with different tools.

UNIT-I**(12 Lectures)****INTRODUCTION:**

Purpose of testing, Dichotomies, model for testing, consequences of bugs.

CREATING AN ENVIRONMENT SUPPORTIVE OF SOFTWARE TESTING:

Writing policy for software testing, economics of testing, building a structured approach for software testing process, work bench Concept.

OVERVIEW OF SOFTWARE TESTING PROCESS:

Advantages of following process cost of computer testing, the seven step software testing process.

UNIT-II**(12 Lectures)****FLOW GRAPHS AND PATH TESTING:**

Basics concepts of path testing, predicates, path predicates and achievable paths, path sensitizing, path instrumentation, application of path testing.

DATAFLOW TESTING: Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.

UNIT-III**(12 Lectures)****DOMAIN TESTING:**

Domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domains and testability.

PATHS, PATH PRODUCTS AND REGULAR EXPRESSIONS:

Path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection

UNIT-IV**(12 Lectures)****LOGIC BASED TESTING:**

Overview, decision tables, path expressions, KV charts, specifications.

STATE GRAPHS:

State graphs, good & bad state graphs, state testing.

UNIT-V**(12 Lectures)****BUILDING TOOLS.**

Win Runner: Introduction to win runner, Features, Add Ins, Identifying GUI objects, Creating GUI map file, Recording test, Choosing Record mode, Running the test, Win Runner Testing process, GUI Check point, Data driven test, Synchronization, Batch Test, Dialogue Boxes, Functions, Regular Expressions, Exception handling, Break points.

TEXT BOOKS:

1. Baris Beizer, “*Software Testing Techniques*”, 2nd Edition, Dreamtech Press ,2002 .
2. Dr.K.V.K.K.Prasad, “*Software Testing Tools*”, 1st Edition, Dreamtech, 2011.
3. William E Perry, “*Effective methods of Software Testing*”, 3rd Edition , John Wiley,2006 .

REFERENCES:

1. Brian Marick, “*The craft of Software Testing*”, 1st Edition, Pearson Education, 1994.
2. Edward Kit, “*Software Testing in the Real World*” , 1st Edition, Pearson Education, 2002.

WEB REFERENCES:

1. http://books.google.co.in/books/about/Software_Testing_Techniques.html?id=Ixf97h356zcc&redir_esc=y
2. <http://my.safaribooksonline.com/book/software-engineering-and-development/software-testing/9780764598371>
3. <http://www.tmhshop.com/9780070583528>
4. http://en.wikipedia.org/wiki/Software_testing
5. <http://www.testingstuff.com/references.html>

