

FACULTY OF COMPUTER APPLICATIONS

- **Course** : BCA
- **Sem.** : 6
- **Subject Code** : 05BC0603
- **Subject** : **Software Testing**
- **Objective** :
- **Prerequisites** : Software Engineering

Unit	Topics Covered	Lectures Required
1	INTRODUCTION: <ul style="list-style-type: none"> ○ Testing as an Engineering Activity–Role of Process in Software Quality–Testing as a Process –Basic Definitions–Software Testing Principles–The Tester’s Role in a Software Development Organization–Origins of Defects–Defect Classes–The Defect Repository and Test Design–Defect Examples–Developer/Tester Support for Developing a Defect Repository. 	9
2	TEST CASE DESIGN: <ul style="list-style-type: none"> ○ Introduction to Testing Design Strategies –The Smarter Tester–Test Case Design Strategies–Using Black Box Approach to Test Case Design Random Testing– Requirements based testing – positive and negative testing --- Boundary Value Analysis –decision tables -Equivalence Class Partitioning state-based testing–cause-effect graphing–error guessing–compatibility testing–user documentation testing– domain testing Using White–Box Approach to Test design– Test Adequacy Criteria– static testing vs. structural testing–code functional testing–Coverage and Control Flow Graphs–Covering Code Logic–Paths–Their Role in White-box Based Test Design– code complexity testing– Evaluating Test Adequacy Criteria. 	10
3	LEVELS OF TESTING: <ul style="list-style-type: none"> ○ The Need for Levels of Testing–Unit Test–Unit Test Planning– Designing the Unit Tests. The Test Harness–Running the Unit tests and Recording results –Integration tests– Designing Integration Tests–Integration Test Planning– scenario testing– defect bash elimination-System Testing– 	10

FACULTY OF COMPUTER APPLICATIONS

	typesofsystem testing- Acceptancetesting- performancetesting-Regression Testing-internationalization testing-ad-hoctesting- Alpha-BetaTests-testingOOsystems- usabilityandaccessibilitytesting	
4	TESTMANAGEMENT: <ul style="list-style-type: none"> o People andorganizationalissuesintesting- organizationstructures fortestingteams- testingservices- TestPlanning-TestPlanComponents-TestPlanAttachments- LocatingTestItems-testmanagement-testprocess- ReportingTestResults -The roleofthreegrupsinTestPlanningandPolicy Development- Introducingthetest specialist-Skillsneededbyatestspecialist- BuildingaTestingGroup. 	10
5	CONTROLLINGANDMONITORING: <ul style="list-style-type: none"> o Softwaretestautomation-skillsneeded forautomation- scopeofautomation-design andarchitectureforautomation- requirements foratesttool-challengesinautomation- Testmetricsandmeasurements- project,progressandproductivitymetrics-StatusMeetings- ReportsandControlIssues-CriteriaforTestCompletion-SCM - Typesof reviews-Developingareviewprogram- ComponentsofReview Plans-Reporting ReviewResults.- evaluatingsoftware quality-defectprevention-testingmaturity model 	9

▪ **COURSE OUTCOMES:**

1. Analyze requirements to determine appropriate testing strategies.
Design and implement comprehensive test plans
2. Instrument code appropriately for a chosen test technique
Apply a wide variety of testing techniques in an effective and efficient manner
3. Compute test coverage and yield according to a variety of criteria
Use of various testing tools.
4. Evaluate the limitations of a given testing process and provide a succinct summary of those limitations
5. Conduct reviews and inspections

FACULTY OF COMPUTER APPLICATIONS

▪ **TEXTBOOKS:**

1. SrinivasanDesikanandGopaldaswamyRamesh,“SoftwareTesting–Principlesand Practices”, Pearsoneducation,2006.
2. AdityaP.Mathur,“Foundationsof SoftwareTesting”,PearsonEducation,2008.

▪ **REFERENCES:**

1. BorisBeizer,“SoftwareTestingTechniques”,SecondEdition,Dreamtech,2003
 2. ElfriedeDustin,“EffectiveSoftwareTesting”,FirstEdition,PearsonEducation, 2003.
 3. Renu Rajani, Pradeep Oak, “Software Testing – Effective Methods, Tools and Techniques”,TataMcGraw Hill,2004
-