



**Computer Science Paper-II**  
**Software Testing**  
**[Discipline Specific Course]**

**Semester: VI      Credits: 2      Subject Code: BS62202      Lectures: 36**

**Course Outcomes:**

**At the end of this course, the learner will be able to:**

- classify various software testing methods and strategies
- interpret a variety of software metrics, and identify defects, and managing those defects for improvement in quality for a given software
- design test cases and test plans, review reports of testing for qualitative software
- compare and contrast the latest testing methods used in the software industries

**Unit 1:Introduction to Software Testing**

**5**

- Basics of Software Testing – faults, errors and failures, Testing objectives
- Principles of Testing
  - Testing and debugging
  - Testing metrics and measurement
- Verification and validation
  - Testing life cycle

**Unit 2: Software Testing Strategies and Techniques**

**10**

- Testability - Characteristics lead to testable software
- Test characteristics
- Test Case Design for Desktop, Mobile, Web application using Excel
- White Box Testing - Basis path testing, Control Structure Testing
- Black Box Testing- Boundary Value Analysis, Equivalence partitioning
- Differences between BBT & WBT

**Unit 3: Levels of Testing**

**10**

- A Strategic Approach to Software Testing
- Test strategies for conventional Software
- Unit testing
- Integration testing – Top-Down, Bottom-up integration
- System Testing – Acceptance, performance, regression, Load/Stress testing, security testing, Internationalization testing
- Alpha, Beta Testing
- Usability and accessibility testing
- Configuration, compatibility testing

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**Unit 4: Testing Web Applications**

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- Two modes Dimension of Quality,
- Error within a WebApp Environment
- Testing Strategy for WebApp
- Test Planning
- The Testing Process –an overview

**Unit 5: Agile Testing**

**5**

- The Testing Process –an overview Agile Testing,
- Difference between Traditional and Agile testing,
- Agile principles and values,
- Agile Testing Quadrants,
- Automated Tests

**Recommended Reference Books:**

- Lisa Crispin and Janet Gregory(2009). *Agile Testing: A Practical Guide for Testers and Agile Teams*. Addison-Wesley Professional
- Pressman, R. S. (2005). *Software engineering: a practitioner's approach*. Palgrave macmillan.
- Rex Black(2011). *Managing the Testing Process: Practical Tools and Techniques for Managing Hardware and Software Testing*. Microsoft Press.
- Srinivasan Desikan, Gopalaswamy Ramesh(2006). *Software Testing Principles and Practices*. Pearson.
- William E. Perry(2000). *Effective Methods for Software Testing*. Wiley Publishing

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