Software Testing
Software Testing
[CORE COURSE]

Semester: VI	Credits: 3	Subject Code: BC62202	Lectures: 48

Course Outcomes:

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

- Introduce to testing tools.
- Gain knowledge in Software testing techniques.
- Design test case plan for testing software.
- Acquire knowledge of basic QA.

Unit 1: Introduction	**10**
• Introduction, Nature of errors, Testing Objectives • Testing principles, Testing fundamentals, • Software reviews, Formal Technical reviews, Inspection and walkthrough • Testing Life Cycle	

Unit 2: Software Testing methodologies	**15**
• White Box Testing and types of white box testing • Test Case Design • Black Box Testing and types of black box testing • Gray Box Testing Overall System structure • Software Testing Process • Unit Testing • Integration- Top-down ,Bottom up, Big Bang Approach, Sandwich Approach • System Testing • Acceptance Testing (alpha, Beta testing) • Validation and Verification • Performance Testing • Regression Testing • Smoke Testing • Load Testing	

Unit 3: Software metrics	**10**
• Introduction • Basic Metrics –size-oriented metric, Function –oriented metric	

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• Cyclometic Complexity Metrics Examples on Cyclometic Complexity	

Unit 4: Testing Tools& Software Quality Assurance (Introduction)	**13**

• Testing for Specialized Environment
  ○ Testing GUI's
  ○ Testing of Client/Server Architectures
  ○ Testing Documentation and Help Facilities
  ○ Testing for Real-Time Systems
• Load runner, Rational Robot, Selenium, Devops, Practical implementation of testing tools
• Quality Concepts, Quality Movement, Background Issues,SQA activities
  ○ Formal approaches to SQA
  ○ Statistical Quality Assurance
• Software Reliability
• The ISO 9000 Quality Standards
  ○ SQA Plan
  ○ Six sigma
• Informal Reviews	

#12 hours for Library work, assignments, practical or field work

Recommended Text Books:

- Roger S Pressman, *Software Engineering –A Practitioner's approach*, Tata McGraw-Hill publication 7 edition.
- William E Perry, *Effective Methods of Software Testing*, Wiley Publishing Inc

Reference Books:

- Dale H. Besterfield, *Total Quality Management,* Prentice Hall, 2003
- Roger S Pressman, *Software Engineering –A Practitioner's approach*, Tata McGraw-Hill publication 7 edition.
- Srinivasan Desikan, Gopalswamy, Ramesh, *Software Testing Principles and Practices,* Pearson Publications
- William E Perry, *Effective Methods of Software Testing*, Wiley Publishing Inc..

Websites:

- www.w3cschool.com

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