**Guru Tegh Bahadur Institute of Engineering and Technology, New Delhi**

**Lecture Plan –Software Testing**

**Semester: 7th Paper Code: ETIT 414**

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| **Topic Details** | **No of Hours Planned** | **Reference/text book** |
| **UNIT-I**  1. Introduction to Testing.  2. What is Software Testing?  3. Why is it so hard?  4. Error, Fault, Failure, Incident.  5. Test Cases | 4 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| 1. Testing Process  2. Limitations of Testing  3. No Absolute Proof of  Correctness  4. Overview of Graph theory | 4 | * Effective methods of software testing, Perry |
| **UNIT-II**  1. Functional Testing Introduction  2. Boundary Value Analysis | 3 | * Black-Box Testing: Boris Beizer |
| 1. Equivalence Class Testing  2. Decision Table Based Testing  3. Cause Effect Graphing  Technique | 3 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| 1.Structural Testing Introduction  2. Path Testing, DD-Paths  Assignment on Functional Testing  3. Cyclomatic Complexity  4. Graph Metrics | 4 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| 1. Data Flow Testing  2. Mutation Testing | 2 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| **UNIT-III**  1. Why do we need to reduce number of test cases?  2. Prioritization Guidelines  3. Priority category Schemes  4. Risk Analysis | 3 | * Software Testing: Louis Tamres |
| 1. Regression Testing  2. Slice based testing  3. Levels of testing  4. Unit Testing | 4 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| 1. Integration Testing  2. System Testing  3. Debugging  4. Domain Testing | 4 | * Paul C. Jorgensen,   Software Testing-A Craftsman's Approach   * Software Engineering: KK Aggarwal and Yogesh Singh |
| **UNIT- IV**  1. Issues in Object oriented Testing  2. Class Testing  3. GUI Testing | 3 | * Testing Object-Oriented System-Models, Patterns and Tools: Robert V. Binder |
| 1. Object Oriented Integration Testing  2. Object Oriented System Testing | 2 | * Testing Object-Oriented System-Models, Patterns and Tools: Robert V. Binder |
| 1. Static and Dynamic Testing Tools  2.Characterstics of Modern Testing Tools | 3 | * Testing Object-Oriented System-Models, Patterns and Tools: Robert V. Binder |