

Elective II

**MTCE 608A(A)
SOFTWARE VERIFICATION, VALIDATION AND TESTING**

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Credits : 4		

Unit 1: Introduction

Definition of testing, goals, psychology, model for testing, effective testing, limitations of testing.

Unit 2 : Testing terminology and Methodology

Defs. Of Failure, faults or bug, error, incident, test case, test ware, life cycle of bug, bug effects, bug classification, test case design, testing methodology, development of test, strategy, verification, validation, testing life cycle model, testing techniques, testing principles.

Unit 3 : Verification and validation

Verification activities, Verification of requirements, verification of HL design, Verification of data design, verification of architectural design, verification of UI design, verification of LL design, intro. to validation activities.

Unit 4 : Black Box testing

Boundary value analysis, equivalence class partitioning, state table based testing, decision table based, grappling, error guessing

Unit 5 : White box testing

Logic coverage criteria, basic path testing, graph matrices, loop testing, data flow testing, mutation testing

Unit 6 Static testing

Types of static testing, technical reviews, inspections, inspection process, structured walk through, walk through process, adv. Of static testing

Unit 7 Validation Testing

Unit testing, drivers stubs, integration testing, methods, effect of module coupling and cohesion, functional testing, system testing, recovery testing, security testing, stress testing, performance testing, usability testing

Unit 8 Test Automation and debugging

S/w measurement and testing, testing metrics, tools debugging, design of practical test cases, reducing no. of test cases, regression testing and test case mgmt.

Reference:

1. Software Engg. By Pressman
2. Software Engg. By Dr. K.K. Aggarwal & Yogesh Singh
3. Software Engg. By Jawadeka