

CSE4301 Software Verification and Validation

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CSE3101	3	6	2	2	0	3

COURSE AIM

- To be familiar with the concepts of verification, validation, testing, test model, test criteria.
- To understand the benefits and limitations of software testing.
- To understand testing techniques for unit testing, integration testing, and system testing.
- To understand the problem of regression testing.
- To understand problems specific to procedural, object-oriented, distributed, or real-time software.
- To understand the different kinds of testing techniques that exist, their advantages and drawbacks.
- To become more familiar with the general notion of quality assurance.
- Understand automation techniques for the testing process.
- Document for the testing process.

COURSE WEEKLY CONTENTS

1	Introduction, economics and role of software verification and validation
2	Verification methods (reviews, walkthroughs, inspections, and desk- checking)
3	Black box testing
4	Black box testing
5	White box testing
6	White box testing
7	7 th Week Examination
8	Test Automation.
9	Agile Testing
10	Mutation Testing.
11	Regression Testing for Evolving Software
12	12 th Week Exam
13	Testing Object-oriented systems
14	Managing the Test Process, Writing Test Plans
15	Testing real-time systems, distributed systems (Challenges and solutions.)

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook Paul Ammann, Jeff Offutt, *Introduction to Software Testing*, Cambridge Universi .