DPG Institute of Technology and Management
Sector 34, Gurugram HR 122004

Lesson Plan

Course Name: Software Testing

Faculty Name: Neelam Dahiya

No. of Lecture Hours/Week	**3**	**Exam Hours**	**3**
Total No. of Lecture Hours	**32**	**Exam Marks**	**75**
Course Code:	**PEC-CSE-413G**	**Semester**	**7th**

Course Objectives:

1. To study fundamental concepts of software testing including software testing objectives, process, criteria, strategies, and methods.
2. To learn how to plan a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.
3. To gain an insight into techniques and skills on how to use modern software testing tools to support software testing projects.

Lecture No.	Topics to be covered	Teaching Methodology	Class Activity/ Event	Remark /CO
UNIT -1				
1	**Introduction** : Overview and Motivation	Chalk &Talk	PPT making	CO1
2	Overview of Software Development Life Cycle (SDLC)	Chalk &Talk		
3	Significance of Software Testing in SDLC	Chalk &Talk		
4	Objectives and Limitations of software testing	Chalk &Talk		
5	Difference between an Error, Fault and Failure (Software Bug)	Chalk &Talk		
6	Software Testing Life Cycle (STLC)	Chalk &Talk		
7	Seven Principles of Software Testing	Chalk &Talk		
8	Role of Software Testing in Software Quality	Chalk &Talk		
UNIT -2				
9	Test Case Design: Terminology,Test Cases and Test Suite	Chalk &Talk		CO2
10	Test Case Design: Test Case Planning	Chalk &Talk		
11	Test Case Design: Test Case Designing	Chalk &Talk		
12	Test Case Design: Characteristics of Good Test Case Design	Chalk &Talk		
13	Test Case Design: Format of test case	Chalk &Talk		
14	Testing Activities: Levels of Testing- Unit Testing	Chalk &Talk	Assignment-1	
15	Testing Activities: Integration Testing	Chalk &Talk		
16	Testing Activities: System Testing.	Chalk &Talk		

17	Testing Activities: V Model for Software Testing.	Chalk &Talk		
18	Revision of unit-2	Discussion		
UNIT -3				
19	Types of Software Testing**:** Black box testing	Chalk &Talk		CO3
20	Types of Software Testing: White Box Testing	Chalk &Talk		
21	Types of Software Testing: Gray Box Testing	Chalk &Talk		
22	Reporting and Analyzing bugs: Problem reports, Content of Problem Report	Chalk &Talk		
23	Reporting and Analyzing bugs: Characteristics of Problem Report	Chalk &Talk	Assignment-2	
24	Reporting and Analyzing bugs: Analysis and Tactics for analyzing a reproducible bug	Chalk &Talk		
25	Reporting and Analyzing bugs: Making a bug reproducible,	Chalk &Talk		CO3
26	Reporting and Analyzing bugs: Problem/Bug Reporting tools	Chalk &Talk		CO3
27	Revision of unit-1, unit-2 for sessional1	Discussion		CO1, CO2
UNIT -4				
28	Test Case Selection: Need of Regression Testing, Non-feasibility of Exhaustive Testing	Chalk &Talk		CO4
29	Test Case Selection: Selection of test cases in regression testing.	Chalk &Talk		
30	Test Case Selection: Minimization test cases in regression testing.	Chalk &Talk		
31	Test Case Selection: Prioritization of test cases in regression testing.	Chalk &Talk		
32	Testing Tools: Manual vs Automated Testing	Chalk,Talk & NPTEL Video		
33	Testing Tools: Types of Testing Tools	Chalk,Talk & NPTEL Video		
34	Testing Tools: Automated Test Case Generation	Chalk,Talk & NPTEL Video		
35	Revision of unit-3, unit-4	Discussion		CO3, CO4
35	**Content Beyond Syllabus**			
36	Testing Tools: Case Study -Bugzilla Tools	Online Expert Talk		

Assessment Methods: -

S.No.	Evaluation Component	Assessment Method	Marks
1	**Internal Marks**		**25**
		Attendance	**5**
2		**Quiz/Presentation**	**5**
3		**Assignment**	**5**
4		**Avg of Sessional 1&2**	**10**
5	**External Marks**	**Final University Exam**	**75**

Suggested Text / Reference Books

Text books:

1. "Software Testing: Principles and Practices", by Naresh Chauhan. Oxford University Press

Reference books

1. "William Perry, Effective Methods for Software Testing , John Wiley & Sons, New York, 1995.
2. Boris Beizer, Software Testing Techniques , Second Volume, Second Edition, Van Nostrand Reinhold, New York, 1990.
3. Louise Tamres, Software Testing , Pearson Education Asia, 2002
4. Roger S. Pressman, Software Engineering – A Practitioner's Approach , Fi fth Edition, McGraw-Hill International Edition, New Delhi, 2001.
5. Boris Beizer, Black-Box Testing – Techniques for Functional Testing of Software and Systems , John Wiley & Sons Inc., New York, 1995.
6. K.K. Aggarwal & Yogesh Singh, Software Engineering , New Age International Publishers, New Delhi, 2003.

Course Outcomes:

At the end of the course, the student will be able:

CO 1	Understand software testing and quality as a fundamental component of software development life cycle.
CO 2	Understand and design the test cases for a given problem.
CO 3	Understand the process of Reporting of software failures(bugs) using tools like Bugzilla .
CO 4	Develop the knowledge of selection of appropriate test cases for execution during regression testing.

Signature of Staff In-charge Signature of HOD