



SANATAN DHARMA COLLEGE, AMBALA CANTT

College with Potential for Excellence, UGC, New Delhi
NAAC Accredited Grade "A+" with CGPA 3.51 in 3rd cycle
ISO 9001:2015 & ISO 14001:2015 Certified



Department of Computer Science Lesson Plan (Session 2022-2023)

Class: BVOC(SD) Sem: VI Course Code: BVSD-63 Nomenclature: Software Testing

Duration: 13 Weeks Dates: 1st Feb- 30th April 2023

SYLLABUS

BVSD -63 Software Testing

Maximum Marks: 100

External: 80

Minimum Pass Marks: 40

Internal: 20

Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that, eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit.

UNIT-I

Fundamental of Testing: Human and Errors, Testing and Debugging, Software Quality, Requirement Behavior and Correctness, Fundamentals of Test Process, Psychology of Testing, General Principles of Testing, Test Metrics; **Role of Testing in SDLC:** Review of Software Development Models (Waterfall Models, Spiral Model, W-Model, V-Model) Agile Methodology and its Impact on Testing, Test Levels (Unit, Component, Module, Integration, System, Acceptance, Generic).

Unit II

Approaches to Testing: Static Testing - Structured Group Examinations, Static Analysis, Control Flow & Data Flow, Determining Metrics. **Dynamic Testing:** Black Box Testing, Equivalence Class Partitioning, Boundary Value Analysis, State Transition Test, Cause Effect Graphing and Decision Table Technique and used Case Testing and Advanced Black Box Techniques;

White Box Testing: Statement Coverage, Branch Coverage, Test of Conditions, Path Coverage, Advanced White Box Techniques, Instrumentation and Tool Support Gray Box Testing, Intuitive and Experience Based Testing.

Unit III

Test Management : Test organization, Test teams, Tasks and Qualifications, Test Planning, Quality Assurance Plan, Test Plan Prioritization Plan, Test Exit Criteria, Cost and Economy Aspects, Test Strategies, Preventive Versus Reactive Approach, Analytical Versus Heuristic Approach, Test Activity Management, Incident Management, Configuration Management, Test Progress Monitoring and Control, Specialized Testing: Performance, Load, Stress Security Testing.

Unit IV

Testing Tools: Automation of Test Execution, Requirement tracker, High Level Review, Types of Test Tools, Tools for Test Management and Control, Test Specification, Static Testing, Dynamic Testing, Non Functional Testing, Selection and Introduction of Test Tools, Tool Selection and Introduction, Cost Effectiveness of Tool Introduction. Testing Object Oriented Software: Introduction to OO Testing Concepts, Differences in OO Testing.

TEXT BOOKS:

- Spillner Andreas, Linz Tilo, Schaefer Hans, Software Testing Foundation, Shoff Publishers & Distributors, 2007
- Srinivasan D. , Gopalswamy R., Software Testing : Principles & Practices, Pearson Education, 2006

REFERENCE BOOKS:

- Mathur Aditya P., Foundations of Software Testing Custom 4th Edition, Pearson Education, 2000

Course Outcomes

After the completion of this course, prospective Computer professionals will have the ability to

Course Title	Software Testing
CO No.	Course Outcomes
CO-1	The basic software debugging methods.
CO-2	White box testing methods and techniques.
CO-3	Black Box testing methods and techniques.
CO-4	Designing test plans.
CO-5	Different testing tools (familiar with open source tools)
CO-6	Quality Assurance Methods

S.No	Instructional Technique	Assessment Methods (AM)
1	Chalk & Talk	Assignments
2	ICT tools	Quiz
3	Group discussions	Group Discussions
4	Industrial visit	Oral Tests
5	Case studies	Sessional
6	Small Projects	Presentations
7	Workshop	Seminar
8	Spoken Tutorials	University Exams
9	Flipped Class	
10.	E-Resources	

Detailed Lesson Plan

Week	Date	Topic to be Covered	Instructional Technique	Assessment Method
1	02.02.2023	Explain Course Outcomes	2-(PPT/Projector)	1,2,3
	03.02.2023	Fundamental of Testing: human and Errors, Testing and Debugging	2-(PPT/Projector)	1,2,4
	04.02.2023	Software Quality, Requirement Behavior and Correctness	2-(PPT/Projector)	1,2,3
2	09.02.2023	Fundamentals of Test Process, Oral Test	2-(PPT/Projector)	1,2,4
	10.02.2023	Psychology of Testing	2-(PPT/Projector)	1,2,4
	11.02.2023	General Principles of Testing	1-(PPT/Projector)	1,2,3
3	16.02.2023	Test Metrics	2-(PPT/Projector)	1,2,3
	17.02.2023	Role of Testing in SDLC	3-Group discussions	1,2,3
	18.02.2023	Maha Shivratri	-----	-----
4	23.02.2023	Diff between SDLC and STLC	2-(PPT/Projector)	1,2,3
	24.02.2023	Review of Software Development Models	2-(PPT/Projector)	1,2,3,4
	25.02.2023	Waterfall Models	2-(PPT/Projector)	1,2,3,4
5	02.03.2023	Spiral Model	3-Group discussions	1,2,3
	03.03.2023	W-Model and V- Model	3-Group discussions	1,2,3
	04.03.2023	Agile Methodology and its Impact on Testing	3-Group discussions	1,2,3
6	09.03.2023	Test Levels (Unit, Component)	2,8,10	1,2,3
	10.03.2023	Holi Holiday	-----	-----
	11.03.2023			
7	16.03.2023	Assignment1	1, 2-(PPT/Projector)	1,2,3,4
	17.03.2023	Test Levels (Module, Integration, System, System, Acceptance, Generic).	2-(PPT/Projector)	1,2,3,4
	18.03.2023	Revision	2-(PPT/Projector)	1,2,3,4
8	23.03.2023	Shahedi Diwas	-----	-----
	24.03.2023	Structured Group Examinations	2-(PPT/Projector)	
	25.03.2023	Static Analysis , Control Flow & Data Flow	2-(PPT/Projector)	1,2,3,4
9	30.03.2023	Ram Navmi	-----	-----
	31.03.2023	Dynamic Testing: Black Box Testing	2-(PPT/Projector)	1,2,3,4

Week	Date	Topic to be Covered	Instructional Technique	Assessment Method
	01.04.2023	Sessional	-----	5
10	06.04.2023	White Box Testing: Statement Coverage, Branch Coverage, Test of Conditions, Path Coverage	2-(PPT/Projector)	1,2,3,4
	07.04.2023	Instrumentation and Tool Support Gray Box Testing	2-(PPT/Projector)	1,2,3,4
	08.04.2023	Intuitive and Experience Based Testing.	2-(PPT/Projector)	1,2,3,4
11	13.04.2023	Assignment 2	6	-----
	14.04.2023	Ambedkar Jayanti	-----	-----
	15.04.2023	Test Management : Test organization, Test teams	2-(PPT/Projector)	1,2,3,4
12	20.04.2023	Tasks and Qualifications, Test Planning	2-(PPT/Projector)	1,2,3,4
	21.04.2023	Quality Assurance Plan, Test Plan Prioritization Plan	2-(PPT/Projector)	1,2,3,4
	22.04.2023	Test Exit Criteria, Cost and Economy Aspects, Test Strategies, Preventive Versus Reactive Approach	2-(PPT/Projector)	1,2,3,4
13	27.04.2023	Analytical Versus Heuristic Approach, Test Activity Management, Incident Management, Configuration Management	2-(PPT/Projector)	1,2,3,4
	28.04.2023	Testing Tools	2-(PPT/Projector)	1,2,3,4
	29.04.2023	Testing Object Oriented Software: Introduction to OO Testing	2-(PPT/Projector)	1,2,3,4

	Teacher Incharge	Head of the Department
Name	Dr. Poonam Rani	Dr. Girdhar Gopal
Sign with Date		