AMBALA COLLEGE OF ENGINEERING AND APPLIED RESERACH DEPTT. OF COMPUTER SCIENCE & ENGINEERING

LECTURE PLAN- (PE-CS-S306A)

NAME OF FACULTY:	Er.Kamna Sharma
DESCIPLINE:	B.Tech - Computer Science & Engineering
SEMESTER:	6 th
SUBJECT:	Fault Tolerant Computing
LESSON PLAN DURATION:	February,2021 - June, 2021
WORK LOAD PER WEEK:	L:T:P- 3:0:0

(IN HOURS)

	Theory	
Week	Lecture No.	Topic (including assignment & Test)
	1	Introduction to Fault Tolerant Computing
1ST	2	Dependability concepts
	3	Dependable system
	4	Techniques for achieving dependability
2ND	5	Dependability measures
	6	Fault, error, failure, faults and their manifestation
	7	Classification of faults and failures
3RD	8	Introduction to Fault tolerant strategies
	9	Fault detection
	10	Fault masking and fault containment
4TH	11	Location, reconfiguration, and recovery
	12	Introduction to Fault tolerant design techniques
	13	Hardware redundancy,Software redundancy
5TH	14	Time Redundancy
	15	Information Redundancy
	16	Revision/Sessional-1
6TH	17	Revision/Sessional-1
	18	Revision/Sessional-1
	19	Introduction to Testing and Design for Testability
7TH	20	Self checking
l'	21	Fail safe circuits
	22	Information redundancy coding techniques
8TH	23	Error detection
	24	Error correction codes
	25	Burst error detection and correction
9TH	26	Unidirectional codes
	27	Introduction to fault tolerance in distributed systems
	28	Byzantine general problem
10TH	29	Consensus protocols
	30	Check pointing and recovery

11TH	31	Revision/Sessional-2
	32	Revision/Sessional-2
	33	Revision/Sessional-2
12TH	34	Stable storage and RAID architecture
	35	Data replication and resiliency
	36	Dependability evaluation techniques and tools: Fault trees
13TH	37	Markov chains
	38	Analysis of fault tolerant hardware architecture
	39	Analysis of fault tolerant software architecture
14TH	40	System-level fault tolerance and low overhead high-availability technique
	41	Fault tolerance in real-time systems: Time-space tradeoff
	42	Fault tolerant scheduling algorithms
15TH	43	Revision/Sessional-3
	44	Revision/Sessional-3
	45	Revision/Sessional-3