

GANGA TECHNICAL CAMPUS

DEPARTMENT OF APPLIED SCIENCES AND HUMANITIES

LESSON PLAN

NAME:Mr. Pankaj

COURSE:BCA

SEMESTER:Second

SUBJECT: Mathematical foundations of computer sciences

LESSON PLAN DURATION:15 WEEK

Lecture:5 Tutorial:0

WEEK	THEORY	
	LECTURE DAY	TOPIC
1	1	introduction to statistics and its importance in computer sciences
	2	Measure of Central Tendency,
	3	Preparing frequency distribution table
	4	exercise discussion
	5	Mean, Mode, Median,
2	1	Measure of Dispersion: Range, Variance and Standard Deviations
	2	exercise discussion
	3	exercise discussion
	4	Correlation and Regression.
	5	introduction to algorithms

3	1	merits and demerits
	2	Exponentiation
	3	How to compute fast exponentiation,
	4	Linear Search, Binary Search,
	5	"Big Oh" notation, Worst case
4	1	exercise discussion
	2	exercise discussion
	3	exercise discussion
	4	Advantage of logarithmic algorithms over linear algorithms,
	5	complexity
5		
	1	introduction to Graphs
	2	Types of graphs
	3	degree of vertex
	4	sub graph, isomorphic and homeomorphic graphs,
	5	exercise discussion
6		
	1	exercise discussion
	2	Adjacent and incidence matrices
	3	Path Circuit ; Eulerian, Hamiltonian path circuit.
	4	exercise discussion
	5	exercise discussion

7		
	1	introduction to trees and their application in computers
	2	Minimum distance trees,
	3	exercise discussion
	4	Minimum weight and Minimum distance spanning trees
	5	Minimum weight and Minimum distance spanning trees
8	1	exercise discussion
	2	Recursively defined function
	3	Merge sort, Insertion sort
	4	Bubble sort
	5	exercise discussion
9	1	Decimal to Binary
	2	introduction to recursive relations
	3	LHRR
	4	LHRRWCCs,
	5	DCRR
10	1	exercise discussion
	2	exercise discussion
	3	introduction to number theory and its use in computera
	4	principle of mathematical induction and its use in proving several mathematical problems
	5	greatest common divisors
11	1	exercise discussion

	2	Euclidean algorithm
	3	Fibonacci numbers
	4	exercise discussion
	5	exercise discussion
12	1	introduction to relations
	2	congruences
	3	equivalence relation
	4	exercise discussion
	5	exercise discussion
13	1	public key encryption schemes
	2	exercise discussion
	3	exercise discussion
	4	revision of unit 1(with exercise questions and previous year problems)
	5	revision of unit 1(with exercise questions and previous year problems)
14	1	revision of unit 2(with exercise questions and previous year problems)
	2	revision of unit 2(with exercise questions and previous year problems)
	3	revision of unit 2(with exercise questions and previous year problems)
	4	revision of unit 2(with exercise questions and previous year problems)
	5	revision of unit 3(with exercise questions and previous year problems)
15	1	revision of unit 3(with exercise questions and previous year problems)
	2	revision of unit 3(with exercise questions and previous year problems)

	3	revision of unit 4(with exercise questions and previous year problems)
	4	revision of unit 4(with exercise questions and previous year problems)
	5	revision of unit 4(with exercise questions and previous year problems)