

JB Institute of Engineering and Technology
CSE Department
II B.Tech CSE

Subject Plan for DS through C++
 by
 D.HIMAGIRI

Subject Plan

Academic year: 2011-2012

Lecture No.	Unit No	Topic	Chapter nos. from Text Books and References
1.	1	Class Definition, Objects, Class Members,	Hand out-1
2.	1	Access Control, Class Scope,	
3.	1	Constructors and destructors, parameter passing methods,	
4.	1	Inline functions, static class members,	
5.	1	this pointer, friend functions,	
6.	1	dynamic memory allocation and deallocation (new and delete),	
7.	1	exception handling.	
8.	1	Programs related to first unit	
9.	1	Programs related to first unit	
10.	2	Function Over Loading, Operator Overloading,	Hand out-2
11.	2	Generic Programming- Function and class templates,	
12.	2	Inheritance basics, base and derived classes,	
13.	2	inheritance types, base class access control,	
14.	2	runtime polymorphism using virtual functions,	
15.	2	abstract classes, streams I/O.	
16.	2	abstract classes, streams I/O.	
17.	2	Programs related to 2nd unit	
18.	2	Programs related to 2nd unit	
17.	2	Programs related to 2nd unit	
18.	3	Algorithms, performance analysis- time complexity and space complexity.	Hand out-3
19.	3	performance analysis- time complexity and space complexity.	
20.	3	Review of basic data structures- The list ADT	
21.	3	Stack ADT,	
22.	3	Queue ADT	
23.	3	Implementation using template classes in C++.(stack and queue)	
24.	3	Trees-basic terminology	

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25.	3	Binary tree ADT	
26.	3	Array and linked list implementation of tree	
27.	3	Array and linked list implementation of tree and traversals.	
28.	3	Traversals and threaded binary tree	
29.	4	Dictionaries, linear list representation, skip list representation,	
30.	4	linear list representation, skip list representation,	
31.	4	operations insertion, deletion and searching,	Hand out-4
32.		hash table representation, hash functions	
33.	4	collision resolution-separate chaining,	
34.	4	open addressing-linear probing, quadratic probing, double hashing,	
35.	4	Re hashing, extendible hashing,	
36.	4	comparison of hashing and skip lists.	
37.	5	Priority Queues Definition, ADT,	
38.	5	insertion, Deletion operations in priority queue	
39.	5	Realizing a Priority Queue using Heaps, ,	
40.	5	Multiway merge	
34.	5	Polyphase Merge.	
37	6	Search Trees (Part 1):- Binary Search Trees, Definition,	Hand out-6
38	6	Implementation	
39	6	Operations- Searching, Insertion and Deletion	
40	6	AVL Trees, Definition, Height of an AVL Tree,	
41	6	Operations Insertion, Deletion and Searching	
42	6	Example problems regarding AVL	
43	7	Search trees (prt II) : Trees definitions, B-Trees, B-Tree of order m,	Hand out-7
44	7	height of a B-Tree, insertion, deletion	

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45	7	insertion, deletion and searching, Comparison of Search Trees	
46	7	Graphs: Basic terminology	
47	7	representations of graphs,	
48	7	Graphs: graph search methods DFS	
49	7	BFS.	
50	8	Text Processing : Pattern matching algorithms-Brute force,	Hand out-8
51	8	the Boyer Moore algorithm,	
52	8	the Knuth-Morris-Pratt algorithm	
53	8	Standard Tries,	
54	8	Compressed Tries, Suffix tries.	
55	8	Suffix tries.	

References:

Type	Detail
Text 1 (T1)	Data structures, Algorithms and Applications in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press Orient Longman Pvt. Ltd.
Text2 (T2)	Data structures and Algorithms in C++, Michael T.Goodrich, R.Tamassia and .Mount, Wiley student edition, John Wiley and Sons.
Reference (R1)	Data structures and Algorithm Analysis in C++, Mark Allen Weiss, Pearson Education. Ltd., Second Edition.
Reference (R2)	Data structures and algorithms in C++, 3rd Edition, Adam Drozdek, Thomson
Reference (R3)	Data structures using C and C++, Langsam, Augenstein and Tanenbaum, PHI.

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Lesson Plan for Each Class:

Time	Topic
5 Minutes	Revision of Previous Chapter
5 Minutes	Outline of the Discussion
30 Minutes	Lecture
5 Minutes	Summary of The Lecture
5 Minutes	Any Queries / Doubts/attendance

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JB Institute of Engineering and Technology
CSE Department
II B.Tech CSE

Subject Plan for ELECTRONIC DEVICES AND CIRCUITS
 by
 B.Kishore Kumar

Subject Plan

Academic year: 2011-2012

Lecture No.	Unit No	Topic	Chapter nos. from Text Books and References
1.	1	Introduction to Electronics	Hand out-1
2.	1	Band Diagrams Conductors, Insulators,	
3.	1	Semiconductors Physics	
4.	1	Basic Equations	
5.	1	P-n Junction Diode	
6.	1	Qualitative Theory of p-n Junction	
7.	1	Qualitative Theory of p-n Junction.	
8.	1	Diode Equation	
9.	1	Diode Equation	
10.	1	Volt-Ampere Characteristics	
11.	1	Temperature dependence of V I Characteristics	
12.	1	Ideal versus Practical	
13.	1	Resistance levels (static and dynamic)	
14.	1	Transition capacitances	
15.	1	Diffusion capacitances	
16.	1	Diode Equivalent circuits	
17.	1	Load Line Analysis	
18.	1	Breakdown Mechanisms in semi conductor diodes	
17.	2	The p-n junction as a rectifier	Hand out-2
18.	2	Half wave rectifiers	
19.	2	Half wave rectifiers	
20.	2	Full wave rectifiers	
21.	2	Full wave rectifiers	
22.	2	Bridge rectifiers harmonic components in a rectifier circuit	
23.	2	Inductor filters	
24.	2	capacitor filters	
25.	2	L SECTION filters	
26.	2	D- section filters	
27.	2	Composition of filters	
28.	2	Voltage regulation using zener diode.	
29.	3	The junction transistor, specification.	Hand out-3
30.	3	Transistor current components.	
31.	3	Transistor as an amplifier	

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32.	3	Transistor construction	
33.	3	BJT operation, BJT symbol,	
34.	3	common base configuration	
35.	3	common emitter configuration	
36.	3	common collector configuration	
37.	3	Limits of operation, BJT specification.	
38.	4	Transistor Biasing and Stabilization Operating point	Hand out-4
39.	4	The DC and AC load lines.	
40.	4	Need for biasing	
34.	4	Collector feedback bias	
37	4	Emitter feedback bias	
38	4	Collector-emitter feedback bias	
39	4	Voltage divider bias. Bias stability	
40	4	Stabilization factors. Stabilization against variations in V_{BE}	
41	4	Bias compensation using diodes and transistors	
42	4	Thermal runaway, thermal stability	
43	5	BJT hybrid model,	Hand out-5
44	5	Determination of h-parameters from transistor characteristics.	
45	5	Analysis of a transistor amplifier circuit using h-parameters	
46	5	Analysis of a transistor amplifier circuit using h-parameters	
47	5	Comparison of CB, CE, and CC amplifiers, configurations	
48	6	The Junction field effect transistor (construction, principle of operation, symbol)	Hand out-6
49	6	Pinch of voltage, voltage-ampere characteristics	
50	6	JFET small signal model	
51	6	MOSFET construction, principle of operation, symbol)	
52	6	MOSFET characteristics in enhancement and depletion modes	
53	7	FET Common Source Amplifier	Hand out-7
54	7	FET Common Drain Amplifier	
55	7	Generalized FET Amplifier	
56	7	FET as Voltage Variable Resistor	
57	7	Comparison of BJT, and FET	

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58	7	Biasing FET, Uni junction Transistor.	
59	8	Principle of Operation and Characteristics of Tunnel Diode (with the help of Energy Band Diagram	Hand out-8
60	8	Principle of Operation and Characteristics of Varactor Diode	
61	8	Principle of Operation of Schottky Barrier Diode	
62	8	SCR	
63	8	Semiconductor Photo Diode	

References:

Type	Detail
Text 1 (T1)	J.Millman and Christos halkias 1991, 2008, TMH
Text2 (T2)	L. Boylestad and Louis Nashelsky
Reference (R1)	Salivahana n suresh Kumar, a vallavaraj 2008 TMH.
Reference (R2)	Dr. K. Lal Kishore, B.S. Publications, 2nd Edition, 2005R
Reference (R3)	Robert t painter PE.(Introduction to electronic devices and circuits)

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5 Minutes	Revision of Previous Chapter
5 Minutes	Outline of the Discussion
30 Minutes	Lecture
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J.B.INSTITUTE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CSE
Class: 2nd Year I Sem

SUB: Mathematical foundation for computer science

Faculty Name: Priyanka.G

Lesson Plan

Academic year: 2011

Lecture No.	Unit No	Topic	Chapter nos. from Text Books and References
1.	1	Introduction, Statements and notations	1.Discrete Mathematics C.L.Liu
2.	1	Connectives	
3.	1	, Well formed formulas, Truth Tables	2.mfcs by Shahnaz bhathul
4.	1	Problems on truth tables	
5.	1	. tautology	
6.	1	Problems on taotology	
7.	1	equivalence implication	
8.	1	Normal forms.	
9.	1	Problems on normal forms	
10.	2	Introduction, Predicative logic	
11.	2	Free & Bound variables and problems	
12.	2	Rules of inference	
13.	2	Consistency and problems	
14.	2	proof of contradiction	
15.	2	Automatic Theorem Proving	
16.	3	Introduction , Properties of binary Relations	
17.	3	Equivalence,transitive,closure	
18.	3	compatibility and partial ordering relations	
20.	3	lattices	
21.	3	Hasse diagram	
22.	3	Functions,inverse function	
23.	3	Composition of functions	
24.	3	Recursive functions	
25.	3	Lattice and its properties	
26.	4	Introduction,algebraic systems	
27.	4	Examples and properties.	
28.	4	Semi groups	
29.	4	monads.	
30.	4	Groups and sub groups	

31.	4	Homomorphism, isomorphism.	
32.	5	Introduction, Basis of counting,	
33.	5	Combinations & Permutations	
34.	5	with repetitions, Constrained repetition	
35.	5	Binomial Coefficients,	
36.	5	Binomial Multinomial theorems	
37.	5	the principles of Inclusion – Exclusion.	
38.	6	Introduction, Generating Functions	
39.	6	Function of Sequences Calculating Coefficient of generating function	
40.	6	Recurrence relations,	
41.	6	Solving recurrence relation by substitution and Generating funds	
42.	6	Characteristics roots solution of In homogeneous Recurrence Relation.	
43.	6	problems	
44.	6	Problems on relations	
45.	7	introduction	
46.	7	Representation of Graph	
47.	7	Representation of Graph	
48.	7	DFS	
49.	7	BFS	
50.	7	Spanning Trees	
51.	7	planar Graphs	
52.	7	problems	
53.	8	Graph Theory and Applications	
54.	8	Basic Concepts Isomorphism and Sub graphs,	
55.	8	Multi graphs and Euler circuits	
56.	8	Hamiltonian graphs,	
57.	8	Chromatic Numbers.	

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References:

Type	Detail
Text 1 (T1)	Elements of discrete mathematics-C L Liu,D P mohapatra
Text2 (T2)	Discrete mathematics for computer science-J L Mott,A Kandel,PHI
Reference (R1)	Discrete Mathematics with Applications, Thomas Koshy,
Reference (R2)	Discrete Mathematics and its Applications, Kenneth H. Rosen, Fifth Edition.TMH.
Reference (R3)	Logic and Discrete Mathematics, Grass Man & Trembley, Person Education.

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J.B.INSTITUTE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CSE
Class: 2nd Year I Sem

SUB: probability and statistics

Faculty Name: sangita k.kulkarni

Lesson Plan

Academic year: 2011

Lecture No.	Unit No	Topic	Chapter nos. from Text Books and References
1.	1	<i>Probability: Sample space and events</i>	1. Probability & Statistics, T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company
2.	1	Related problems on sample space	
3.	1	Definition of <i>Probability</i> , Problems on <i>Probability</i>	2.ps by Shahnaz bhathul
4.	1	Problems on <i>Probability</i>	
5.	1	<i>The axioms of probability, Some Elementary theorems</i>	
6.	1	<i>Some Elementary theorems</i>	
7.	1	<i>Conditional probability and problems</i>	
8.	1	<i>Baye's theorem. And problems</i>	
9.	1	Random variables – Discrete and continuous	
10.	2	Binomia distribution,properties and problems	
11.	2	Poison distribution,properties and problems	
12.	2	Normal distribution,properties and problems	
13.	2	Problems on Normal distribution,	
14.	2	Sampling distribution, Populations and samples	
15.	2	- Sampling distributions of mean (known and unknown) proportions, sums and differences.	
16.	3	Estimation: Point estimation	
17.	3	Problems on Estimation: Point estimation	
18.	3	interval estimation and problems	
20.	3	Bayesian estimation. And problems	
21.	3	Test of Hypothesis Means– Hypothesis concerning one and two means	
22.	3	Problems on Hypothesis concerning one and two means(one tail test)	
23.	3	Problems on Hypothesis concerning one and two means(two tail test)	
24.	3	Test of Hypothesis s proportion – Hypothesis concerning one and two proportion	
25.	3	Problems on Hypothesis concerning one and two proportion (one and two tail test), Type I and Type II errors.	

26.	4	Confidence interval means	
27.	4	Problems on Confidence interval means	
28.	4	Confidence interval proportion	
29.	4	Problems on Confidence interval proportion	
30.	4	Practice problems	
31.	4	Slip Test	
32.	5	Tests of significance – Student's t-test,	
33.	5	Problems on Tests of significance – Student's t-test,	
34.	5	Tests of significance F-test	
35.	5	Problems on Tests of significance F-test	
36.	5	Tests of significance χ^2 test	
37.	5	Problems on Tests of significance, χ^2 test	
38.	6	correlation	
39.	6	Problems on correlation	
40.	6	Problems on correlation	
41.	6	Regression	
42.	6	Problems on regression	
43.	6	Problems on regression	
44.	6	Lines of regression and rank of regression	
45.	7	Queuing Theory explanation	
46.	7	Pure Birth and Death Process	
47.	7	M/M/1 Model and Simple Problems.	
48.	7	M/M/1 Model and Simple Problems.	
49.	7	M/M/1 Model and Simple Problems.	
50.	7	Practice	
51.		Practice	
52.	7	Slip test	
53.	8	Introduction to stochastic processes	
54.	8	Markov process classification of states	
55.	8	Examples of markov chains	
56.	8	Stochastic matrix	
57.	8	Limiting probabilities	

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Text 1 (T1)	Probability & Statistics, T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company
Text2 (T2)	Probability & Statistics by bheeshma rao
Reference (R1)	A text book of Probability & Statistics, Shahnaz Bathul, V. G. S. Book Links.
Reference (R2)	Probability & Statistics, D. K. Murugeson & P. Guru Swamy, Anuradha Publishers
Reference (R3)	Probability & Statistics for Engineers, Miller and John E. Freund, Prentice Hall of India

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