TECNIA INSTITUTE OF ADVANCED STUDIES

GRADE 'A' INSTITUTE

Department of Information Communication & Technology

COURSE PLAN

ACADEMIC SESSION 2024-25

 # As per Scheme & Syllabus (w.e.f. Academic Session 2024-2025 onwards); As per UGC Curriculum & Credit Framework for Undergraduate Programme (CCFUP) (Dec 2022) Guru Gobind Singh Indraprastha University, New Delhi.

PROGRAMME CODE:	020	PROGRAMME:	Bachelor of Computer Applications (BCA)	SHIFT:	1st			L	4	T/P	0	Credits	4
COURSE CODE :	BCA-106T	COURSE NAME:	Data Structure with Algorithms	SECTION:	A								
		COURSE TYPE:	Core Course Theory (CCT)	FACULTY:	Mr. Sukant Vats								

LEARNING OBJECTIVES:
In this course, the learners will be provided expertise in
1. Understanding of the basic concepts of data structures and their operations like, insertion, deletion, searching and sorting
2. Design algorithms and pseudo codes of various linear and non-linear data structures

PREREQUISITE: 1. C Programming Skills
2. Discrete Mathematics

COURSE OUTCOME & MAPPING, COURSE ARTICULATION

	DISCIPLINARY KNOWLEDGE: Disciplinary Knowledge: Apply the knowledge of computer application concepts and domain knowledge to solve the problems in IT domain/IT industry	PROBLEM ANALYSIS: Identify, formulate, review research literature, and analyse complex computer application problem at their workplace and for the society.	DESIGN /DEVELOPMENT OF SOLUTIONS: Design and evaluate solutions for computer applications problems, and design the processes that meet specified needs with appropriate consideration for the public health, safety, cultural, societal, and environmental considerations.	MODERN TOOL USAGE: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computer application activities, with an understanding of the limitations	PROFESSIONAL ETHICS: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.	LIFE-LONG LEARNING: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.	PROJECT MANAGEMENT AND FINANCE: Demonstrate knowledge and understanding of the computing and manage projects and in multidisciplinary environments.	COMMUNICATION EFFICACY WITH COOPERATION/TEAMWORK: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions. Function effectively as an individual and as a member or a leader.	SOCIETAL AND ENVIRONMENTAL CONCERN: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional	INNOVATION AND ENTREPRENEURSHIP: Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.
	DISCIPLINARY KNOWLEDGE	PROBLEM ANALYSIS	DESIGN /DEVELOPMENT OF SOLUTIONS	MODERN TOOL USAGE	PROFESSIONAL ETHICS	LIFE-LONG LEARNING	PROJECT MANAGEMENT AND FINANCE	COMMUNICATION EFFICACY WITH COOPERATION/TEAMWORK	SOCIETAL AND ENVIRONMENTAL CONCERN	INNOVATION AND ENTREPRENEURSHIP

CO - PO MAPPING		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Familiarize the basics of data structures and algorithms.	4	1	4	2	-	2	1	1	1	1
CO2	Understand and apply linear and nonlinear data structures and their operations.	4	1	4	2	-	2	1	1	1	4
CO3	Compare and implement searching, sorting and hashing techniques.	4	1	4	2	-	2	1	1	1	4
CO4	Appraise and determine the correct data structure for any given real world problem.	4	1	4	2	-	2	1	1	1	4
	Course Articulation (Average)	4	1	4	2	-	2	1	-	-	3.25

(SUKANT VATS)

Dr. Rayesh Kumar
(HOD-BCA)
HoD
BCA-TIAS

S. No.	Lecture No.	Unit No	Topic	Sessional Outcome Students will able to :	Experiential Learning	Participative Learning	Problem Solving Methodologies	ICT Tools & E-Resources Utilization	Mapping with CO	Class Material (PPT Faculty+ Students)	Additional Material (Links/ Journals/ Articles/ NEWS)	Mode of Assessment	Status
1	L1	1	Linear Data Structures-introduction(Static)	Student would be able to understand basic concepts of static data structure	Demonstration	Discussion	Numerical	https://www.youtube.com/watch?v=xLeUpcjHS0	CO1	PPT	https://www.youtube.com/watch?v=wRkeBGrPos	Students presentation (CIA)	
2	L2	1	Introduction to Algorithms-Attributes	Articulate the concept of Algorithm and its attributes	Demonstration	Discussion	Numerical	https://www.youtube.com/watch?v=ehv9hePi4A0	CO1	PPT	https://www.youtube.com/watch?v=ehv9hePi4A0&t=23s	Students presentation (CIA)	
3	L3	1	Design Techniques	Understand the different design techniques of algorithm design	Demonstration	Lecture through PPT	Numerical	https://www.youtube.com/watch?v=kjaIlWrgTRo	CO1,CO2	PPT	https://www.youtube.com/watch?v=kaYQ5VOOWg	Students presentation (CIA)	
4	T1	1	Linear Data Structures, algorithms,design techniques(tutorials of L1,L2,L3)	understand Linear Data Structures, algorithms,design techniques	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=kjaIlWrgTRo	CO1,CO2	PPT		Students presentation (CIA)	
5	L4	1	Time Space Trade Off	define time and space complexities	Demonstration	Numerical	Numerical	https://www.youtube.com/watch?v=kjaIlWrgTRo	CO1,CO2	PPT	https://www.youtube.com/watch?v=rS8c	Questions from Assignment 1	
6	L5	1	Classification and Operations of Data Structures	understand the operations on data structure	Demonstration	Lecture through PPT	Numerical	https://www.youtube.com/watch?v=kjaIlWrgTRo	CO1,CO2	PPT	https://www.youtube.com/watch?v=sJWbAUPvMkA	Students presentation (CIA)	
7	L6	1	Arrays-two dimensional and three dimensional	Articulate and define types of arrays in a c program	Demonstration	Flip Classroom	Numerical	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=zNLWpXpzzyY	Students presentation (CIA)	
8	T2	1	Time Space Trade Off,operations of data,2D and 3D array(utorials of L4,L5,L6)	understand Time Space Trade Off,operations of data,2D and 3D array	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=zNLWpXpzzyY	Students presentation (CIA)	
9	L7	1	Memory Representation, Address Calculation	Explain how to calculate the address of array and its memory representation	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=s9bF1L2w8gw	Students presentation (CIA)	
10	L8	1	Sparse Matrices- Types, Representation	define sparse matrices and how to represent them	Demonstration	Discussion/ Doubt Clearing session	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
11	L9	1	Sparse Matrices- Types, Representation	define sparse matrices and how to represent them	Demonstration	Discussion/ Doubt Clearing session	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
12	T3	1	Memory Representation, Address Calculation,Sparse matrices(tutorial of L7,L8,L9)	understand Memory Representation, Address Calculation,Sparse matrices	Demonstration	Discussion/ Doubt Clearing session	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
13	L10	1	Searching and Sorting	understand the concept of searching and sorting	Demonstration	Extempore	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
14	L11	1	Linear Search, Binary Search	Classify the concept of linear search and its implentation in a c program	Demonstration	Discussion	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT1XE	Students presentation (CIA)	
15	L12	1	Selection Sort,Bubble Sort	Contrast and define types of sorting	Demonstration	Discussion	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
16	T4	1	Searching and Sorting-selection and bubble(tutorials of L10,L11,L12)	understand Searching and Sorting selection and bubble	Demonstration	Discussion/ Doubt Clearing session	https://www.youtube.com/wa	https://www.sciencedirect.com/topics/computer-science/dimensional-array	CO2, CO4	PPT	https://www.youtube.com/watch?v=JYy8g2WT68E	Students presentation (CIA)	
17	L13	1	Insertion Sort,Merge Sort	Contrast and define types of sorting	Demonstration	Discussion/ Doubt Clearing session	https://www.youtube.com/wa	https://www.youtube.com/watch?v=PkJlc5tBRUE	CO3	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	
18	L14	1	Elementary Comparison of Searching and Sorting Algorithms	Classify and define comparisons in searching and sorting	Demonstration	Discussion/ Doubt Clearing session	Practical	https://www.youtube.com/watch?v=jMKDBEunPQ	CO3	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	
19	L15	1	Hashing-Hash Table	Interpret the concept and techniques of hashing	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.hackerearth.com/practice/data-structures/hash-tables/basics-of-hash-tables/tutorial/	CO3	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	
20	T5	1	Insertion Sort, Merge Sort,comparison, hashing(Tutorial of L13,L14,L15)	understand Insertion Sort, Merge Sort,comparison, hashing	Demonstration	Discussion/ Doubt Clearing session	Numerical		CO3	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	
21	L16	1	Functions and Collision Resolution	Interpret the concept and techniques of hashing	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.hackerearth.com/practice/data-structures/hash-tables/basics-of-hash-tables/tutorial/	CO3	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	
22	L17	2	Introduction to Static Dynamic Memory Allocation	Contrast the concept of dynamic memory allocation	Demonstration	Flip Classroom	Numerical	https://www.geeksforgeeks.org/static-data-structure-vs-dynamic-data-structure/?ref=lbp	CO2	PPT	https://www.youtube.com/watch?v=PkJlc5tBRUE	Students presentation (CIA)	

Subject (SUKANT VaTS)

Dr. Rajesh Kum (HOD-BCA)

HoD BCA-TIAS

23	L18	2	Linked List Types,Singly Linked List	Infer and define how to use singly linked list with c program	Demonstration	Flip Classroom	Problem Analysis	https://www.youtube.com/watch?v=R9PTBwOzceo&list=PLBlnK6fEyqRi3-hwLGzcaquOs5OBTCww	CO2, CO3	PPT	https://www.youtube.com/watch?v=PkJIc5tBRUE	Students presentation (CIA)	
24	T6	2	CRT,DMA,Linked list(tutorials of L16,L17,L18)	understand hasing,DMA,linked list	Mini-Project	Discussion/ Doubt Clearing session	Problem Analysis		CO2, CO3	PPT	https://www.youtube.com/watch?v=PkJIc5tBRUE	Students presentation (CIA)	
25	L19	2	Doubly Linked List	Infer and define how to use doubly linked list with c program	Mini-Project	Discussion/ Doubt Clearing session	Problem Analysis	https://www.geeksforgeeks.org/introduction-and-insertion-in-a-doubly-linked-list/	CO2	PPT	https://www.youtube.com/watch?v=PkJIc5tBRUE	Students presentation (CIA)	
26	L20	2	Header Linked List	Articulate the concept of header linked list	Mini-Project	Extempore	Problem Analysis	https://www.youtube.com/watch?v=hNW3Cyq044&t=10s	CO2	PPT	https://www.youtube.com/watch?v=hNW3Cyq_044	Students presentation (CIA)	
27	L21	2	Circular Linked List	Interpret how to use circular linked list with c program	Mini-Project	Extempore	Practical	https://www.youtube.com/watch?v=HMkdlu5sP4A&t=13s	CO2	PPT	https://www.youtube.com/watch?v=HMkdlu5sP4A	Students presentation (CIA)	
28	T7	2	Doubly ,Circular,header Linked List(tutorials of L19,L20,L21)	understand Doubly ,Circular,header Linked List	Mini-Project	Discussion/ Doubt Clearing session	Practical	https://www.youtube.com/watch?v=HMkdlu5sP4A&t=13s	CO2	PPT		Students presentation (CIA)	
29	L22	2	Operations: Creation	Interpret how to use creation operation with linked list	Mini-Project	Flip Classroom	Practical	Projector	CO2	PPT	https://www.youtube.com/watch?v=4tU7d0TTiZQ	Students presentation (CIA)	
30	L23	2	Insertion, Deletion	compare and contrast insertion and deletion operations in a c program	Mini-Project	Flip Classroom	Practical	Projector	CO2	PPT	https://www.youtube.com/watch?v=4tU7d0TTiZQ	Students presentation (CIA)	
31	L24	2	Modification, Searching	Contrast modification and searching operations in a c program	Mini-Project	DISCUSSION	Practical	Projector	CO3	PPT	https://www.youtube.com/watch?v=4tU7d0TTiZQ	Students presentation (CIA)	
32	T8	2	operations on linked list(tutorials of L22,L23,L24)	understand operations on linked list	Mini-Project	Discussion/ Doubt Clearing session	Practical	Projector	CO3	PPT		Students presentation (CIA)	
33	L25	2	Sorting, Reversing,Merging	understand and define sorting and reversing and merging a linked list	Mini-Project	Discussion/ Doubt Clearing session	Practical	https://www.youtube.com/watch?v=XgABnoJLtG4	CO2, CO3	PPT	https://www.youtube.com/watch?v=8TVaEGeaGGc	Viva (CIA)	
34	L26	3	Abstract Data Types,Stack-Introduction	understand and define the concept of abstract data types	Mini-Project	Extempore	Practical	https://www.youtube.com/watch?v=ZniDyolzrBw	CO2	PPT	https://www.youtube.com/watch?v=BFVrKIF6weA	Viva (CIA)	
35	L27	3	Static and Dynamic Implementation	compare and define the static and dynamic implementation of stack	Mini-Project	Extempore	Practical	https://www.youtube.com/watch?v=OvEgcKs-5_I	CO1, CO3,CO4	PPT	https://www.javatpoint.com/data-structure-stack	Viva (CIA)	
36	T9	3	ADT-stack,static and dynamic implementation(tutorials of L25,L26,L27)	understand ADT-stack,static and dynamic implementation	Mini-Project	Discussion/ Doubt Clearing session	Practical	https://www.youtube.com/watch?v=OvEgcKs-5_I	CO1, CO3,CO4	PPT		Viva (CIA)	
37	L28	3	Operations and Applications of stack	contrast operations and applications on stack	Mini-Project	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=zbpFkwla_60	CO2	PPT	https://www.youtube.com/watch?v=OvEgcKs-5_I	Viva (CIA)	
38	L29	3	Different notations in stack	understand various notations on stack	Mini-Project	DISCUSSION	Numerical	https://www.youtube.com/watch?v=wCu1skK2_Fc	CO2	PPT	https://www.scaler.com/topics/stack-in-c/#:~:text=The%20stack%20data%20structure%20can,being%20Peek%2C%20isEmpty%20and%20isFull.	Questions from Assignment 2	
39	L30	3	Evaluation and Conversion between Polish Notations	Articulate how to evaluate and conversion between notations	Mini-Project	DISCUSSION	Numerical	https://www.youtube.com/watch?v=ndH8w_If8pg	CO2	PPT	https://www.scaler.com/topics/polish-notation-in-data-structure/	Questions from Assignment 2	
40	T10	3	operations of stack,notations,polish &reverse polish notations(tutorials of L28,L29,L30)	understand operations of stack,notations,polish &reverse polish notations	Mini-Project	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=ndH8w_If8pg	CO2	PPT		Questions from Assignment 2	
41	L31	3	Queues-Introduction to Static and Dynamic Implementation	Contrast and implement queue with static and dynamic data structures	Mini-Project	Discussion/ Doubt Clearing session	Practical	https://www.youtube.com/watch?v=IXzItMWLHOk	CO2	PPT	https://www.javatpoint.com/ds-types-of-queues	Questions from Assignment 1	
42	L32	3	Types- Linear Queue, Circular Queue	Ilustrate and define linear and circular queue	Mini-Project	Discussion/ Doubt Clearing session	Numerical	https://www.javatpoint.com/ds-types-of-queues	CO2	PPT	https://www.youtube.com/watch?v=IXzItMWLHOk	Questions from Assignment 2	
43	L33	3	Doubly Ended Queue, Priority Queue	Comapre and define doubly ended and priority queue	Mini-Project	Discussion/ Doubt Clearing session	Problem Analysis	https://www.javatpoint.com/ds-types-of-queues	CO2	PPT	https://www.youtube.com/watch?v=IXzItMWLHOk	Questions from Assignment 2	
44	T11	3	queue-linear ,circular queue,deque,priority queue(tutorials of L31,L32,L33)	understand queue-linear ,circular queue,deque,priority queue	Mini-Project	Discussion/ Doubt Clearing session	Problem Analysis	https://www.javatpoint.com/ds-types-of-queues	CO2	PPT	https://www.youtube.com/watch?v=IXzItMWLHOk	Questions from Assignment 2	
45	L34	4	Introduction to Non Linear Data Structures	Articulate the concept of non linear data structure	Mini-Project	DISCUSSION	Problem Analysis	https://www.youtube.com/watch?v=PggtEQDccXg	CO4	PPT	https://www.techiedelight.com/terminology-and-representations-of-graphs/	Questions from Assignment 2	
46	L35	4	Graphs: Notations & Terminologies and Representation	understand graph ,its notations and terminologies	Demonstration	Extempore	Problem Analysis	https://www.youtube.com/watch?v=5hPfm_uqXmw	CO4	PPT	https://www.techiedelight.com/terminology-and-representations-of-graphs/	Questions from Assignment 2	
47	L36	4	Adjacency Matrix, Incidence Matrix and Linked Representation.	Interpret the concept of matrices and representation	Demonstration	Extempore	Problem Analysis	https://www.youtube.com/watch?v=5hPfm_uqXmw	CO2	PPT	https://www.techiedelight.com/terminology-and-representations-of-graphs/	Questions from Assignment 2	
48	T12	4	Non linear DS,Graphs,adjacency,incidence matrix(tutorials of L31,L32,L33)	understand Non linear DS,Graphs,adjacency,incidence matrix	Demonstration	Discussion/ Doubt Clearing session	Problem Analysis	https://www.youtube.com/watch?v=5hPfm_uqXmw	CO2	PPT	https://www.techiedelight.com/terminology-and-representations-of-graphs/	Questions from Assignment 2	

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49	L37	4	Trees: Notations & Terminologies, Representation,	Define trees ,its notations and terminologies	Demonstration	DISCUSSION	Problem Analysis	https://www.youtube.com/watch?v=YAdLFsTG70w	CO1,CO3	PPT	https://www.javatpoint.com/tree	Questions from Assignment 2	
50	L38	4	Binary Trees Types- Complete, Full, Strict	Define binary trees with implementation	Demonstration	DISCUSSION	Numerical	https://www.youtube.com/watch?v=YAdLFsTG70w	CO2	PPT	https://www.youtube.com/watch?v=YAdLFsTG70w	Questions from Assignment 2	
51	L39	4	Expression Binary Tree	Articulate and define expression trees with implementation	Demonstration	DISCUSSION	Numerical	https://www.youtube.com/watch?v=YAdLFsTG70w	CO2	PPT	https://www.youtube.com/watch?v=YAdLFsTG70w	Questions from Assignment 2	
52	T13	4	Trees,binary trees,expression tree(tutorials of L37,L38,L39)	understand Trees,binary trees,expression tree	Demonstration	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=YAdLFsTG70w	CO2	PPT	https://www.youtube.com/watch?v=YAdLFsTG70w	Questions from Assignment 2	
53	L40	4	Tree Traversals (Recursive)	Illustrate and use recusive tree traversals	Demonstration	Debate	Numerical	https://www.enjoyalgorithms.com/blog/binary-tree-traversals-preorder-inorder-	CO4	PPT	https://www.youtube.com/watch?v=-b2IciNd2L4	Questions from Assignment 2	
54	L41	4	Binary Search Tree	Interpret and define the concept of Binary Search Tree	Demonstration	Debate	Numerical	https://www.youtube.com/watch?v=sXABdGalFNg	CO4	PPT	https://www.youtube.com/watch?v=sXABdGalFNg	Questions from Assignment 2	
55	L42	4	Basic Operations - Introduction and Creation	Articulate the basic operations on trees	Understand recursive trees,BST,basic operations of BST	Debate	Numerical	https://www.youtube.com/watch?v=sXABdGalFNg	CO2	PPT	https://www.youtube.com/watch?v=sXABdGalFNg	Questions from Assignment 2	
56	T14	4	recursive trees,BST,basic operations of BST(tutorials of L40,L41,L42)	recursive trees,BST,basic operations of BST	Understand recursive trees,BST,basic operations of BST	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=sXABdGalFNg	CO2	PPT	https://www.youtube.com/watch?v=sXABdGalFNg	Questions from Assignment 2	
57	L43	4	AVL Tree, Heap Tree	Compare the concept of AVL and Heap trees	Understand recursive trees,BST,basic operations of BST	GROUP DISCUSSION	Numerical	https://www.youtube.com/watch?v=E9DOBLNB-aE	CO4	PPT	https://www.youtube.com/watch?v=E9DOBLNB-aE	Questions from Assignment 2	
58	L44	4	M- Way Tree	Define the concept of M-Way trees	Understand recursive trees,BST,basic operations of BST	Debate	Numerical	https://www.youtube.com/watch?v=E9DOBLNB-aE	CO1, CO3	PPT	https://www.youtube.com/watch?v=E9DOBLNB-aE	Questions from Assignment 2	
59	L45	4	B Tree.	understand the concept of B- trees	Understand recursive trees,BST,basic operations of BST	Debate	Numerical	https://www.youtube.com/watch?v=94ErZ5K8XZg	CO2	PPT	https://www.youtube.com/watch?v=94ErZ5K8XZg	Questions from Assignment 2	
60	T15	4	Avl trees,M-way trees,heap trees,B-trees(tutorials of L43,L44,L45)	understand Avl trees,M-way trees,heap trees,B-trees	Understand recursive trees,BST,basic operations of BST	Discussion/ Doubt Clearing session	Numerical	https://www.youtube.com/watch?v=94ErZ5K8XZg	CO2	PPT	https://www.youtube.com/watch?v=94ErZ5K8XZg	Questions from Assignment 2	

Note : 1 Credit (Theory) =15 Hrs. in a Semester; 1 Credit (Practical) =30 Hrs. in a Semester.

Suggested Readings :(Latest Edition)

TEXTBOOKS

TB1.	Schaum's Outline Series, "Data Structures", TMH, Special Indian Ed., Seventeenth Reprint, 2014
TB2.	Y. Langsam, M. J. Augenstein and A.M. Tanenebaum, "Data Structures using C and C++", Pearson Education India, Second Edition, 2015.
TB3.	D. Samanta, "Classic Data Structures", PHI, Second Edition, 2009

REFERENCE BOOKS:

RB1.	Ashok N kamthane "Introduction to Data Structures in C", Pearson, Third Edition, 2009
RB2.	E. Horowitz and S. Sahni, "Fundamentals of Data Structures in C", Universities Press, Second edition, 2008.
RB3.	D. Malhotra and N. Malhotra, "Data Structures and Program Design using C", Laxmi Publications, First edition, 2018.
RB4.	Y. Kanetkar " Data Structures through C", BPB Publication, Third Edition, 2019.
RB5.	R.F Gilberg, and B A Frouzan- "Data Structures: A Pseudocode Approach with C", Thomson Learning, Second Edition, 2004.
RB6.	A. K. Rath, and A.K. Jagadev, "Data Structures and Program Design Using C", Scitech Publications, Second Edition, 2011.

JOURNALS

1. Journal of Computer Science and Technology
2. International Journal of Computer Applications
3. Journal of Educational Computing Research
4. Advances in Computational Research
5. Computer Science and Information Systems
6. Advanced Computing : an International Journal
7. Computer Science and Information Systems
8. Advanced Computing : an International Journal

Name of Faculty : Mr. Sukant Vats (SUKANTVATS)

Head of Department : Dr. Rajesh Kumar HoD BCA-TIAS

Date :