

Siruseri IT park, OMR, Chennai - 603103

LESSON PLAN							
Department of <u>EEE</u>							
Name of the Subject	C Programming and Data structures	Name of the	R,MUTHU PANDEESWARI				
Subject Code	CS3353	Year / Sem	II/III				
Acad Year	2022-2023	Batch	2020-2024				
Course Objective							
To introduce the basics of C programming language							
To learn the concepts of advanced features of C							
To understand the concepts of ADTs and linear data structures							
To know the concepts of non linear data structure and hashing							
To familiarize the concepts of sorting and searching techniques							
Course Outcome							
Upon completion of the course, the students will be able to:							
1.Develop C programs for any real world/technical application							
2.Apply advanced features of C in solving problems							
3.Write functions to implement linear and non-linear data structures operations							
4.Suggest and use appropriate linear and non-linear data structure operations for solving a given problem							
5.Appropriately use sort and search algorithms for a given application							
6.Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval							
Lesson Plan							
Sl. No.	Topic(s)	T / R* Book	Periods Required	Mode of Teaching (BB / PPT / NPTEL / MOOC / etc.)	Blooms Level (L6)	CO	PO
UNIT I C PROGRAMMING FUNDAMENTALS							
1	Data Types	T	1	PPT	L2	1	PO1
2	Variables	T	1	PPT	L2	1	PO1
3	Operators	T	1	PPT	L1, L2	1	PO1
4	Expressions and Statements	T	1	PPT	L2	1	PO1
5	Conditional Statements	T	1	PPT	L1, L2	1,2	PO1 &2
6	Functions	T	1	PPT	L2	1,2	PO1 &2
7	Recursive Functions	T	1	PPT	L2	1,2	PO1 &2
8	Arrays	T	1	PPT	L2	1,2	PO1 &2
9	Single and Multi-Dimensions	T	1	PPT	L1, L2	1,2	PO1 &2
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any : Quiz							
Evaluation method : Test							
UNIT II C PROGRAMMING ADVANCED FEATURES							
10	Structures	T	1	BB	L2	2	PO1 &2
11	Union	T	1	BB	L2	2	PO1 &2
12	Enumerated Data Types	T	1	BB	L2	2	PO1 &2
13	Pointers	T	1	BB	L2	2	PO1 &2
14	Pointers to Variables	T	1	BB	L2	2	PO1 &2
15	Arrays and Functions	T	2	BB	L1, L2	2	PO1 &2
16	File Handling	T	1	BB	L1, L3	2	PO1 &3
17	Preprocessor Directives	T	1	BB	L2	2	PO1 &4
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any : Assignment							
Evaluation method : Mark based							
UNIT III - LINEAR DATA STRUCTURES							
18	Abstract Data Types(ADTs)	T	1	BB	L2	3	PO1 &3
19	List ADT	T		BB	L2	3	PO1 &3
20	Array Based Implementation	T		BB	L2	3	PO1 &3
21	Linked List	T	2	BB	L1, L2	3	PO1 &3
22	Doubly Linked Lists	T		BB	L2	3	PO1 &3
23	Circular Linked Lists	T		BB	L4	3	PO1 &3
24	Stack ADT	T	2	PPT	L1, L2	3	PO1 &3
25	Implementation of Stack	T		PPT	L1	3	
26	Applications	T		PPT	L2	3	
27	Queue ADT	T	1	PPT	L3	3	
28	Priority Queues	T	1	PPT	L1,L2	3	
29	Queue Implementation	T	1	BB	L3	3	
30	Applications	T	1	BB	L1	3	
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any : Assignment							
Evaluation method : Mark based							

UNIT IV NON LINEAR DATA STRUCTURES										
37	Trees	T	1	PPT	L2	4	PO1			
38	Binary Trees	T		PPT	L1, L2	4	PO1			
39	Tree Traversals	T	2	PPT	L4	4	PO1			
40	Expression Trees	T		PPT	L1, L2	4	PO1			
41	Binary Search Tree	T	1	PPT	L2	4	PO1			
42	Hashing and Hashing Functions	T		PPT	L2	4	PO1			
43	Separate chaining	T	1	PPT	L2	4	PO1			
44	Open Addressing	T		BB	L1	4	PO1			
45	Linear Probing	T	1	BB	L2	4	PO1			
46	Quadratic Probing	T		BB	L1,L3	4	PO1			
47	Double hashing	T	1	BB	L4	4	PO1			
48	Rehashing	T	1	BB	L3,L4	4	PO1			
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any : Role Play										
Evaluation method : Marks based on their presentation and points										
UNIT V SORTING AND SEARCHING TECHNIQUES										
49	Insertion sort	T	1	PPT	L2	5	PO1			
50	Quick sort	T	1	PPT	L2	5	PO1			
51	Heap sort	T	1	PPT	L2	5	PO1			
52	Merge sort	T	1	PPT	L2	5	PO1			
53	Linear Search	T	1	PPT	L2	5	PO1			
54	Binary Search	T	1	PPT	L1, L2	5	PO1			
55	Bus structure – Bus operation	T	1	PPT	L2	5	PO1			
56	Arbitration	T	1	PPT	L2	5	PO1			
57	Interface circuits - USB.	T	1	PPT	L1, L2	5	PO1			
58										
59										
60										
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any: Assignment										
Evaluation method : Marks based										
Content Beyond the Syllabus Planned										
1	Graphs									
2	Queues									
Text Books										
1	Mark Allen Weiss,"Data Structures and Algorithm Analysis in C", Second Edition ,Pearson Education,1997.									
2	ReemaThareja,"Programming in C",Second Edition,Oxford University Press,2016									
3										
Reference Books										
1	Brian W.Kernighan Rob pike,"The Practice of Programming",Pearson Education.1999.									
2	Paul Deitel, Harvey Deitel,"C How to Program ",Seventh Edition , Pearson Education,2013									
3	Alfred V Aho , John E Hopcroft, Jeffrey D.Ullman , " Data Structures and Algorithms",Pearson Education,1983.									
4	Ellis Horowitz, SartaSahni and Susan Anderson , "Fundamentals of Data Structures", Galgotia,2008.									
5										
Website / URL References										
1	http://nptel.ac.in/									
3										
Blooms Level										
Level 1 (L1) : Remembering		Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing				Higher Order Thinking	Projects / Mini Projects	
Level 2 (L2) : Understanding				Level 5 (L5) : Evaluating						
Level 3 (L3) : Applying				Level 6 (L6) : Creating						
Mapping syllabus with Bloom's Taxonomy LOT and HOT										
Unit No	Unit Name	L1	L2	L3	L4	L5	L6	LOT	HOT	Total
Unit 1	C PROGRAMMING	4	5	0	0	0	0	9	0	9
Unit 2	C PROGRAMMING ADVANCED	2	4	3	0	0	0	9	0	9

Unit 3	LINEAR DATA STRUCTURES					4	5	0	0	0	0	9	0	9
Unit 4	NON-LINEAR DATA STRUCTURES					2	4	3	0	0	0	9	0	9
Unit 5	SORTING AND SEARCHING					1	3	5	1	0	0	8	1	9
Total						13	21	11	1	0	0	44	1	45
Total Percentage						28.8889	46.6667	24.4444	2.22222	0	0	97.7778	2.22222	100
CO PO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	0	0	0	0	0	0	0	0	0	3	2
CO2	3	2	1	0	0	0	0	0	0	0	0	0	3	2
CO3	3	2	1	0	0	0	0	0	0	0	0	0	3	2
CO4	3	2	1	0	0	0	0	0	0	0	0	0	3	2
CO5	3	2	1	1	0	0	0	0	0	0	0	0	3	2
Avg	3	2	1	0.2	0	0	0	0	0	0	0	0	3	2
Justification for CO-PO mapping														
CO1	Develop C programs for any real world technical application													
CO2	Apply advanced features of C in solving problems													
CO3	Write functions to implement linear and non-linear data structure operations													
CO4	Suggest and use appropriate linearnonlinear data structure operations for solving a given problem													
CO5	Appropriately use sort and search algorithms for a given application													
CO6	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval													
3		High level			2		Moderate level			1		Low level		
Name & Sign of Faculty Incharge : R.MUTHU PANDEESWARI														
Name & Sign of Subject Expert : Mr.Weslin														
Head of the Department :Dr.Jeha J														

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