

File Code : LMCST / ... C8T306 AAD ...

(B Batch)

LOURDES MATHA

COLLEGE OF SCIENCE AND TECHNOLOGY

LOURDES HILLS, KUTTICAL, TRIVANDRUM - 695574

Bureau Veritas Certified ISO 9001-2008 Institution



COURSE DIARY

Name LEKSHMI CHANDRA

Department..... CSE

OUR MISSION

Lourdes Matha College of Science and Technology is committed to mould world class professionals to meet the present and future needs in the global market. We will strive it to achieve the mission by creating an excellent learning environment with the state of art technology and a team of competent and dedicated teachers and by providing value - based education to mould a younger generation with integrity and character capable of achieving progress and prosperity through selfless service to humanity

TIME TABLE

Period \ Day	1	2	3	4	5	6	7
Monday	AAD						
Tuesday			AAD	AAD			
Wednesday							AAD
Thursday							
Friday				AAD			

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COURSE DIARY

Name : Lekshmi Chandelran

Department : CSE

Designation : Asst. Professor

Branch : CSE Semester: 6 Batch: B

Session : From: 6/2/2023 To: 27/6/2023.

GENERAL INSTRUCTIONS

- *Student performance should be evaluated solely on an academic basis*
- *Student's evaluation should be fair, consistent, transparent and accountable.*
- *Evaluation of students' performance should be disclosed to the students.*

1. Keep the Course Diary up to date by clearly indicating the subject coverage and students attendance on the relevant pages.
2. Paste the syllabus in the relevant page.
3. Write / paste the Course plan in the relevant page.
4. Events in a semester such as Series Test days, Cultural / Celebration days, days for extra / co-curricular activities etc. may be indicated in the Year Calendar.
5. Assignment details may be written in the Course Diary or may be filed in the Course File.
 - (i) Minimum 3 no. of assignments should be given.
 - (ii) Different sets of questions may be given in an assignment (at least three) to a class.
 - (iii) Assignments may be in the form of written - closed / open book, individual / group, home assignment, or in the form of oral presentation, quiz, seminar etc.
6. The minimum attendance for appearing for the end semester examination is 75% in each course and the internal evaluation marks in the course should be 45% or above.
7. Show complete split up of sessional marks in the page "Particulars of Marks". Final sessional mark for each student should be equal to the sum of marks awarded for Assignments (10) and Series Tests (40).
8. Internal mark percentage shall not exceed 25% over the end semester mark %.
9. All the entries in the course diary must be, legibly written without overwriting and free of errors.
10. Do not count marks of class tests along with the series test for computing sessional mark.
11. The staff member will be responsible for the safe custody of the Course Diary and (s) he should return it to the HOD at the end of semester or earlier if (s) he leaves the department or discontinue the subject.
12. Follow KTU regulations for computing sessional marks.

PRINCIPAL

SYLLABUS

CST 306	ALGORITHM ANALYSIS AND DESIGN	Category	L	T	P	Credit	Year of Introduction
		PCC	3	1	0	4	2019

Preamble:

The course introduces students to the design of computer algorithms, as well as analysis of algorithms. Algorithm design and analysis provide the theoretical backbone of computer science and are a must in the daily work of the successful programmer. The goal of this course is to provide a solid background in the design and analysis of the major classes of algorithms. At the end of the course students will be able to develop their own versions for a given computational task and to compare and contrast their performance.

Prerequisite:

Strong Foundation in Mathematics, Programming in C, Data Structures and Graph Theory.

Course Outcomes: After the completion of the course the student will be able to

CO#	CO
CO1	Analyze any given algorithm and express its time and space complexities in asymptotic notations. (Cognitive Level: Apply)
CO2	Derive recurrence equations and solve it using Iteration, Recurrence Tree, Substitution and Master's Method to compute time complexity of algorithms. (Cognitive Level: Apply)
CO3	Illustrate Graph traversal algorithms & applications and Advanced Data structures like AVL trees and Disjoint set operations. (Cognitive Level: Apply)
CO4	Demonstrate Divide-and-conquer, Greedy Strategy, Dynamic programming, Branch-and Bound and Backtracking algorithm design techniques (Cognitive Level: Apply)
CO5	Classify a problem as computationally tractable or intractable, and discuss strategies to address intractability (Cognitive Level: Understand)
CO6	Identify the suitable design strategy to solve a given problem. (Cognitive Level: Analyze)

LESSON PLAN AND TEACHING RECORD

MODE L/T	MODULE	ALLOTTED HOURS	TOPICS	PLANNED	TAKEN	
				HOURS	HOURS	DATE
L	1	9	Introduction to Algms analysis: characteristics of algorithms		2	6/2/23
L			Criteria for algms analysis, Time & space complexity - Best, Worst, Avg	1	2	7/2/23
L			Asymptotic Notations	1	1	10/2/23
T			Time complexity calculation of insertion sort - (Best, Avg, Worst)	1	2	20/3/23
L			Illustration of asymptotic Notations, classifying fns by their asymptotic growth	2		
L			Time & space complexity calculation	1		
L			Solving Recurrence Eqs - Iteration Method	1	2	28/2/23
T			Examples of Iteration Method	1	1	1/3/23
L			Recursion Tree Method	1	1+2	1/3/23
L			Substitution method and Master's Theorem and its Illustration			21/3/23
				1	1	23/3/23
					1	24/3/23

LESSON PLAN AND TEACHING RECORD

MODE L/T	MODULE	ALLOTTED HOURS	TOPICS	PLANNED	TAKEN	
				HOURS	HOURS	DATE
L	2	10	Self Balancing Trees - Properties of AVL trees, Rotations of AVL Trees	1	2	3/3/23
L			AVL Tree Insertion	1	2	6/3/23
L			AVL Tree Deletion	1	2	9/3/23
T			AVL Tree Insertion example	1	1+1	6/3/23
L			Disjoint set operations	1	1	29/8/23
L			Union and find algorithms			
L			Illustration of union and find algo			
T			AVL Tree Deletion	1	1	9/3/23
L			Graph algorithm - BFS	1	2	10/3/23
L			DFS traversal	1	1	15/3/23
L			Strongly connected components	1	1	12/6/23
L			Topological sorting	1	1	31/3/23
T			Unversely Qns on BFS and DFS graph traversal	1	1	28/3/23
						17/3/23

LESSON PLAN AND TEACHING RECORD

MODE LT	MODULE	ALLOTTED HOURS	TOPICS	PLANNED	TAKEN	
				HOURS	HOURS	DATE
L	4	8	Dynammic Programming: Control Abstraction			
			Optimality Principle	1	3	28/4/23
L			Matrix chain multiplication	1		
L			Illustration of Matrix chain			
			multiplication - Analysis	1		
T			Matrix chain University Qn's	1	1	1/6/23
L			All pairs shortest path - Floyd Marshall	1	1	9/6/23
L			Backtracking - Control Abstraction		1	2/6/23
L			N Queens problem	1	1	5/6/23
T			Floyd Marshall univ Qn:	1		
L			Branch and Bound - TSP	2	2	6/6/23

LESSON PLAN AND TEACHING RECORD

MODE L/T	MODULE	ALLOTTED HOURS	TOPICS	PLANNED	TAKEN	
				HOURS	HOURS	DATE
L	5	10	Introduction to Complexity theory			
			Tractable and Intractable pblms	1	1	16/6/23
L			Complexity classes - P, NP	1	1	19/6/23
L			NP Hard and NP Complete pblms			
T			Complexity theory	1		
L			NP completeness Proof - CLIQUE	1	2	20/6/23
L			Vertex cover problems	1		
L			Approximationaly algm - Bin Packing algms	1	1	26/6/23
T			Vertex cover problem	1		
L			Graph Colouring Algm	1	1	23/6/23
L			Randomized algorithm - Monte- carlo and Las Vegas		1	27/6/23
L			Randomized version of Quick sort algorithm with analysis	1		

LESSON PLAN AND TEACHING RECORD

[illegible]

Total Hours Planned :

Staff incharge :

Total Hours Taken : 6/

Staff incharge :

Roll No	Name	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Month	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
		Date	6	7	7	8	10	17	27	28	28	1	1	2	2	3	3
		Period	1	3	4	7	4	3	4	3	4	3	4	3	4	3	4
1	Gorind Asok		1	2	3	a	a	4	5	6	7	8	9	10	11	12	13
2	Gowri Shankar C S		a	a	a	a	a	1	2	3	4	5	6	7	8	9	10
3	Jiby Jacob.		a	a	a	1	a	2	3	a	a	4	5	a	a	6	7
4	Jinu K Varghese		a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
5	Jobin Joy		1	a	a	a	a	a	a	a	a	a	a	a	a	2	3
6	Johaun Paul Joe		1	2	3	a	4	5	6	7	8	9	10	11	12	13	14
7	Josaphina Benny		a	a	a	a	a	1	2	a	a	3	4	5	6	7	8
8	Joshu Joseph		a	a	a	1	a	2	3	a	a	4	5	6	7	8	9
9	Karlas Shaji		a	a	a	a	a	a	a	a	a	a	a	a	a	1	2
10	Karuk Nandan K V		a	a	a	a	a	a	a	a	a	a	a	1	2	3	4
11	Keeshaana Chand M		a	a	a	a	a	1	2	3	4	5	6	7	8	9	10
12	K. G. Bhaskar Shankar		1	a	a	a	a	a	a	a	a	a	a	2	3	4	5
13	Lokibā P L		1	2	3	a	4	5	6	a	a	7	8	9	10	11	12
14	Misho John.		a	a	a	a	a	a	a	a	a	a	a	1	2	3	4
15	Muhammed Nazem K		a	a	a	a	a	a	a	1	2	a	a	a	a	a	a
16	Muhammed Ajmal S S		1	a	a	a	a	a	a	a	a	a	a	a	a	2	3
17	Muhammed Fais AH		1	a	a	a	a	a	a	a	a	a	a	a	a	2	3
18	Mukesh S		1	a	a	a	a	a	a	a	a	a	a	a	a	2	3
19	Nandana V S		1	a	a	a	a	a	a	2	3	4	5	6	7	8	9
20	Navami Asok.		a	a	a	a	a	1	2	3	4	5	6	7	8	9	10
21	Nikhil R. S		1	a	a	a	a	2	3	a	a	4	5	6	7	8	9
22	N. Sekhar Aditya		1	a	a	a	a	a	a	a	a	a	a	2	3	4	5
23	Roshan S		a	a	a	a	a	1	2	3	4	5	6	a	a	a	a
24	Rosmini Rose Binoy		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
25	Saahil S L		1	a	a	a	a	a	a	2	3	4	5	a	a	6	7
26	Samson Sunny		a	a	a	a	a	1	2	3	4	5	6	7	8	9	10
27	Sheela's Shehaz		1	a	a	a	a	a	a	a	a	a	a	2	3	4	5
28	Sudhiz N S		1	a	a	a	2	a	a	a	a	a	a	a	a	a	a
29	Soosya S Suresh		1	2	3	a	4	5	6	7	8	9	10	11	12	13	14
30	Sulashan Mohammed Nasser		a	a	a	a	a	a	a	a	a	a	a	a	a	1	2
31	Sunilbā Varghese		1	2	3	a	4	5	6	7	8	a	a	9	10	11	12

16	17	18	19	20	21	22	23	24	25	26	27	28
3	3	3	3	3	3	3	3	3	3	3	3	3
6	6	9	9	10	10	13	15	17	20	23	24	28
3	4	5	6	3	4	4	7	3	1	2	4	4
14	15	16	17	18	19	20	21	22	a	23	24	25
11	12	13	14	a	a	a	15	16	17	a	18	19
a	a	8	9	a	a	a	a	10	a	11	12	a
a	a	a	a	a	a	a	1	2	3	4	5	6
4	5	6	7	a	a	a	a	8	a	9	10	11
15	16	17	18	19	20	21	22	23	24	25	26	27
a	a	a	a	a	a	a	9	10	11	12	13	14
a	a	10	11	12	13	14	15	16	17	18	19	20
a	a	a	a	a	a	a	3	4	5	a	a	6
5	6	a	a	7	8	9	10	11	12	a	13	14
a	a	a	a	a	a	a	11	12	13	14	15	16
6	7	8	9	10	11	12	a	a	a	13	14	15
13	14	15	16	a	a	a	17	18	19	a	20	21
a	a	5	6	7	8	9	10	11	12	a	a	a
a	a	3	4	5	6	7	a	8	9	10	11	12
4	5	6	7	8	9	10	11	12	13	14	15	16
4	5	6	7	8	9	10	11	12	13	a	14	a
a	a	4	5	6	7	8	a	9	10	11	12	13
a	a	10	11	12	13	a	14	15	16	17	18	19
a	a	a	a	a	a	11	12	13	14	a	15	16
10	11	12	13	14	15	16	17	18	19	20	21	22
6	7	8	9	10	11	12	13	14	15	16	17	18
7	8	9	10	a	a	11	a	a	12	13	14	a
16	17	18	19	20	21	22	23	24	25	26	27	28
8	9	10	11	a	a	a	a	12	13	a	14	15
a	a	11	12	13	14	15	16	17	a	18	19	20
6	7	8	9	10	11	a	12	13	14	15	16	17
3	4	5	6	7	8	9	10	11	12	a	13	a
a	a	15	16	a	a	a	17	18	19	20	21	22
3	4	5	6	a	a	a	7	8	9	10	a	11
a	a	13	14	15	16	17	18	19	20	21	22	23

Assignment I	Assignment II	Assignment III	Internal Test I (20) (50)	Internal Test II (20) (50)	Retest	Marks for Assignment (40)	Marks for Test (40) (25)	Internal Marks (50)	Final (50)
7.5	7.5		46	46		15	23	48	49
6.5	7.5		30	37		13	17	39	40
7.5	7.5		13	22		15	9	33	34
7.5	7.5		14	29		15	11	34	35
7.5	7.5		26	18		15	11	35	36
7.5	7.5		35	35		15	18	43	44
7.5	7.5		ab	27	14	15	10	34	35
7.5	7.5		41	38		15	20	45	46
7.5	7.5		ab	21	10	15	8	32	33
7.5	7.5		16	18		15	9	33	34
7.5	7.5		37	37		15	19	43	44
7.5	7.5		6	11		15	4	29	30
7.5	7.5		37	38		15	19	44	45
7.5	7.5		ab	15	12	15	7	31	32
6.5	7.5		15	16		13	8	29	30
7.5	7.5		27	33		15	15	40	41
x	x	x	ab	ab	x	x	x	x	x
7.5	7.5		28	33		15	15	39	40
7.5	7.5		31	ab	30	15	15	39	40
7.5	7.5		24	37		15	15	39	40
7.5	7.5		39	26		15	16	40	41
7.5	7.5		20	21		15	10	35	36
7.5	7.5		0	10		15	3	26	27
7.5	7.5		36	44		15	20	45	46
7.5	7.5		10	34		15	11	34	35
7.5	7.5		24	44		15	17	41	42
7.5	7.5		37	40		15	19	44	45
7.5	7.5		14	35		15	12	35	36
7.5	7.5		29	37		15	17	42	43
7.5	4.5		13	28		12	10	30	31
7.5	7.5		48	48		15	24	49	50

42	43	44	45	46	47	48	49	50	51	52	53	54	55
4	4	4	6	6	6	6	6	6	6	6	6	6	6
28	28	28	1	2	5	6	6	7	7	8	9	12	14
3	4	7	4	4	1	3	4	6	7	4	1	7	4
39	40	41	42	43	a	44	45	46	47	48	49	50	51
25	26	27	28	a	29	30	31	32	33	34	35	36	37
21	22	23	a	24	25	26	27	28	29	a	30	31	32
a	a	a	15	a	16	17	18	19	20	21	22	23	24
22	23	24	25	26	27	28	29	30	31	32	33	34	35
44	42	43	a	a	44	45	46	47	48	49	50	51	52
24	25	a	a	a	26	27	28	29	30	31	32	33	34
31	32	33	35	36	37	38	39	40	41	42	43	44	45
a	a	a	16	a	17	18	19	20	21	22	23	24	25
24	25	26	27	28	29	30	31	32	33	34	35	36	37
27	28	29	30	31	32	a	a	33	34	35	36	37	38
a	a	a	26	27	28	29	30	31	32	33	34	35	36
4	35	36	37	38	39	40	41	42	43	44	45	46	47
21	22	23	24	a	25	26	27	28	29	30	31	32	33
a	a	a	19	a	20	21	22	23	24	25	26	27	28
a	a	a	28	29	30	31	32	33	34	35	36	37	38
a	a	a	a	a	a	19	20	a	a	a	a	a	a
a	a	a	25	26	27	28	29	30	31	32	33	34	35
7	30	31	a	a	32	33	34	35	36	37	38	39	a
T	26	27	28	29	30	31	32	33	34	35	36	a	37
	35	a	36	37	38	39	40	41	42	43	44	a	45
2	31	a	32	33	34	35	36	37	38	a	39	40	41
	25	a	a	a	26	27	28	29	30	31	a	32	33
	42	43	44	45	46	47	48	49	50	51	52	53	54
T	26	a	a	27	28	29	30	31	32	33	34	35	36
	32	a	a	a	33	34	35	36	37	38	39	40	41
	29	30	a	31	32	33	34	35	36	37	38	39	40
	19	20	21	22	23	24	25	a	a	a	a	a	26
	37	38	39	40	41	42	43	44	45	46	47	48	49
	a	a	18	a	19	20	21	22	23	24	25	26	27
	36	37	38	39	40	41	42	43	44	45	46	47	48

Assignment I	Assignment II	Assignment III	Internal Test I (20) (50)	Internal Test II (20) (50)	Retest	Marks for Assignment I (15)	Marks for Test (40) (50)	Internal Marks (50)	Final (50)
7.5	7.5		46	46		15	23	48	49
6.5	7.5		30	37		13	17	39	40
7.5	7.5		13	22		15	9	33	34
7.5	7.5		14	29		15	11	34	35
7.5	7.5		26	18		15	11	35	36
7.5	7.5		35	35		15	18	43	44
7.5	7.5		ab	27	14	15	10	34	35
7.5	7.5		41	38		15	20	45	46
7.5	7.5		ab	21	10	15	8	32	33
7.5	7.5		16	18		15	9	33	34
7.5	7.5		37	37		15	19	43	44
7.5	7.5		6	11		15	4	29	30
7.5	7.5		37	38		15	19	44	45
7.5	7.5		ab	15	12	15	7	31	32
6.5	7.5		15	16		13	8	29	30
7.5	7.5		27	33		15	15	40	41
x			ab	ab	x				
7.5	7.5		28	33		15	15	39	40
7.5	7.5		31	ab	30	15	15	39	40
7.5	7.5		24	37		15	15	39	40
7.5	7.5		39	26		15	16	40	41
7.5	7.5		20	21		15	10	35	36
7.5	7.5		0	10		15	3	26	27
7.5	7.5		36	44		15	20	45	46
7.5	7.5		10	34		15	11	34	35
7.5	7.5		24	44		15	17	41	42
7.5	7.5		37	40		15	19	44	45
7.5	7.5		14	35		15	12	35	36
7.5	7.5		29	37		15	19	42	43
7.5	4.5		13	28		12	10	30	31
7.5	7.5		48	48		15	24	49	50

ANALYSIS OF INTERNAL EXAMINATIONS

	First Internal Test	Second Internal Test	Retest
Date of Internal Test	29/8/2023.	16/6/2023.	
Date of Return of Answer Sheet after Valuation	11/4/2023.	22/6/2023.	
Number of Students Attended	33.	34	
Roll No. of Absentees	7, 9, 14, 17.	17, 19, 37	
No. of Students with <70%	19	18	
No. of Students with <40%	9	6	
Class Average	25.9	29.97	
Reason for low performance of students, if any			
Remedial actions taken			
Signature	Staff incharge HOD	Staff incharge HOD	Staff incharge HOD

DETAILS OF CLASS ASSIGNMENTS

No.	Description	Date of Announcement	Date of Conduct / Submission	Date of Return after Valuation
1	DFS Traversal	17/8/23	24/4/23	11/4/23
2	Matrix chain multiplication	1/6/23	5/6/23	7/6/23

DETAILS OF TUTORIAL CLASSES

[illegible]

ANALYSIS OF INTERNAL MARKS

Year & Duration	Total Number of Students	No. of students with < 40% marks	Class Average	Highest	Lowest
Jan - June 2023	27	9	27.9	50	27


Signature of Staff incharge

Signature of HOD

ANALYSIS OF END SEMESTER EXAMINATION RESULTS

Month & Academic Year of Exam	Total Number of Students	No. of students Failed	No. of Absentees	No. of Students Passed in all Subjects	Pass Percentage

Signature of Staff incharge

Signature of HOD



APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Academic Calendar - January 2023 to June 2023

MBA S4, M.Arch S4, M.Plan S4, MCA S4, INT MCA S4/S6, B.Arch S4/S6/S8, B.Tech S4/S6/S8, BHMCT S4/S6, B.Des S8

Jan-23				Feb-23				Mar-23			
Days	Date	Description	Class	Days	Date	Description	Class	Days	Date	Description	Class
Sun	1			Wed	1	Commencement of classes for MBA S4	9	Wed	1		29
Mon	2	Mannam Jayanthi		Thu	2		10	Thu	2		30
Tue	3			Fri	3	Course Selection and Mapping Begins for MBA S4, M.Arch S4, M.Plan S4, MCA S4, INT MCA S4/S6, B.Arch S4/S6/S8, B.Tech S4/S6/S8, BHMCT S4/S6, B.Des S8	11	Fri	3		31
Wed	4			Sat	4			Sat	4		
Thu	5			Sun	5			Sun	5		
Fri	6			Mon	6	Commencement of classes for B.Tech S4/S6,BHMCT S6/S4	12	Mon	6		32
Sat	7			Tue	7		13	Tue	7		33
Sun	8			Wed	8		14	Wed	8		34
Mon	9			Thu	9		15	Thu	9	First Series test to be completed for INT MCA S4/S6,B.Arch S8 Project Evaluation-I MBA S4	35
Tue	10			Fri	10	First CC Meeting for MBA S4, MCA S4, INT MCA S4/S6, B.Arch S4/S6/S8, B.Tech S4/S6/S8, BHMCT S4/S6	16	Fri	10		36
Wed	11			Sat	11			Sat	11		
Thu	12			Sun	12			Sun	12		
Fri	13			Mon	13		17	Mon	13		37
Sat	14			Tue	14		18	Tue	14		38
Sun	15			Wed	15	Course Selection and Mapping Ends for MBA S4, M.Arch S4, M.Plan S4, MCA S4, INT MCA S4/S6, B.Arch S4/S6/S8, B.Tech S4/S6/S8, BHMCT S4/S6, B.Des S8	19	Wed	15		39
Mon	16			Thu	16		20	Thu	16	Second CC meeting for MCA S4, INT MCA S4/S6	40
Tue	17			Fri	17		21	Fri	17		41
Wed	18			Sat	18	Shivaratri		Sat	18		
Thu	19	Commencement of classes for B.Des S8, MCA S4, INT MCA S4/S6	1	Sun	19			Sun	19		
Fri	20		2	Mon	20		22	Mon	20		42
Sat	21			Tue	21		23	Tue	21		43
Sun	22			Wed	22		24	Wed	22	First Series test to be completed for B.Arch S4/S6, MBA S4, B.Tech S4/S6/S8, BHMCT S6/S4	44
Mon	23	Commencement of classes for B.Arch S8	3	Thu	23		25	Thu	23		45
Tue	24		4	Fri	24		26	Fri	24		46
Wed	25		5	Sat	25			Sat	25		
Thu	26	Republic Day		Sun	26			Sun	26		
Fri	27		6	Mon	27		27	Mon	27		47
Sat	28			Tue	28	First Interim evaluation for MCA S4 Jury Evaluation-I for M.Plan S4, M.Arch S4	28	Tue	28		48

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