MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

COURSE PLAN

Department	:	Computer Science and Engineering
Course Name & code	:	ADVANCED DATA STRUCTURES AND ALGORITHMS LAB & CSE 5141
Semester & branch	:	I Semester M.Tech-CSE & CSIS
Name of the faculty	:	GURURAJ

No of contact hours/week:

L	T	P	C
0	0	3	1

Course Outcomes (COs)

	At the end of this course, the student should be able to:	No. of Contact Hours	Marks
CO1:	Analyze the efficiency of any given algorithm	6	20
CO2:	Determine Amortized cost of given algorithm	12	30
CO3:	Implement advanced data structures B-tree and Binomial trees heaps	9	25
CO4:	Discover shortest path from single source to all other vertices and also all pairs shortest	9	25
CO5:	Click or tap here to enter text.	Hrs.	Marks
	Total	36	100

Assessment Plan

1. Continuous Evaluation	Enter the weightage in percentage (60%).
Conduction of 2 evaluations for 20 marks each Mini Project	: 40 M : 20 M 60 M
2. Lab Examination	Enter the weightage in percentage (40%).
• Examination of 2 hours duration (Max. Marks: 40) Write-up : 15M Execution: 25M	

Lesson Plan

L. No.	Topics	Course Outcome Addressed
L1	Fundamentals of the Analysis of Algorithms Efficiency	CO1
L2	Amortized Analysis: Aggregate analysis	CO1, CO2
L3	B-Trees : Creation	CO1, CO2
L4	B-trees: Searching	CO1, CO2
L5	B-trees: Deletion	CO1, CO2, CO3
L6	Binomial Heaps - Creation	CO1, CO2, CO3
L7	Binomial Heaps - Minimum finding	CO2, CO3, CO4
L8	Bellman-Ford algorithm, The Floyd-Warshall algorithm	CO2, CO3, CO4
L9	Mini Project	CO1, CO2, CO3, CO4
L10	Mini Project	CO1, CO2, CO3, CO4
L11	Mini Project	CO1, CO2, CO3, CO4
L12	Mini Project	CO1, CO2, CO3, CO4
L13	Click or tap here to enter text.	CO

L14	Click or tap here to enter text.	CO

References:

1.	Cormen Thomas H., Leiserson Charles E, Rivest Ronald L. and Stein Clifford,"Introduction to Algorithms", (3e), MIT Press, 2009
2.	Cormen Thomas H., Leiserson Charles E, Rivest Ronald L. and Stein Clifford, "Introduction to Algorithms" (2e), Prentice-Hall India, 2001.
3.	Baase Sara and Gelder A.V., "Computer Algorithms -Introduction to Design and Analysis", (3e), Pearson Education, 2000
4.	Anany Levitin, "Introduction to the Design and Analysis of Algorithms ", (3e), Pearson Education, 2011
5.	Click or tap here to enter text.
6.	Click or tap here to enter text.
7.	Click or tap here to enter text.

Submitted by: GURURAJ

(Signature of the faculty)

Date: 07-08-2023

Approved by: Dr. Krishnamoorthi M.

(Signature of HOD)

Date: 08-09-2021

FACULTY MEMBERS TEACHING THE COURSE (IF MULTIPLE SECTIONS EXIST):

FACULTY	SECTION	FACULTY	SECTION
Mr. Gururaj	CSE		

Mr. Prakash K Aithal	CSIS		

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