NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JUL-DEC 2025)

Name of Teacher: POOJA **Designation: A.P** **Subject Name: D.S**
Branch: MCA **Semester: 1ST** **Subject Code: MCA-20- 101**
Date of Start: 08/09/2025 **Total Load: 28.2 hrs** **Date of Completion: 21/11/2025**

Module/Unit-1: OVERVIEW OF DATABASE MANAGEMENT SYSTEM

S.No	Name of Topic	Hours
1	Introduction, Flow of Control, Input output functions, Arrays and Structures, Functions	50 Min
2	Need of data structures, choice of right data structures, types of data structures	50 Min
3	how to design and develop an algorithm: algorithm analysis, complexity of algorithms Big-oh notation	50 Min
4	One Dimensional and Multi-dimensional array Arrays,	50 Min
5	Various Sorting (Linear, Binary) and searching operations on arrays (Selection, insertion, bubble, Shell, Quick, Merge),	50 Min
6	Various Sorting (Linear, Binary) and searching operations on arrays (Selection, insertion, bubble, Shell, Quick, Merge),	50 Min
7	sparse matrix, sparse matrix representation.	50 Min
8	traversal, selection, searching, insertion, deletion, and sorting.	50 Min
9	Multidimensional arrays, address calculation of a location in arrays	50 Min
10	Stacks, array representation of stack, Applications of stacks.	50 Min
11	Queues, Circular queues,	50 Min
12	array representation of Queues, Deque	50 Min
13	priority queues, Applications of Queues.	50 Min

	Total	10.8 hrs

Module/Unit 2- Relationship Model

S.No	Name of Topic	Hours
1	Pointer variables, Pointer and arrays	50 Min
2	array of pointers, pointers and structures	50 Min
3	Dynamic allocation. Concept of a linked list,	50 Min
4	Circular linked list, doubly linked list,	50 Min
5	operations on linked lists. Concepts of header linked lists,	50 Min
6	Applications of linked lists, linked stacks linked Queues..	50 Min
	Total	5 hrs

Module/Unit 3-Overview of Transaction Management

S.No	Name of Topic	Hours
1	Introduction to trees, binary trees, representation and traversal of trees	50 Min
2	threaded binary trees, AVL trees,	50 Min
3	M-way tree, B and B+ Trees, Red Black Trees,	50 Min
4	Splay Trees,Applications of trees like The Huffman Coding Algorithm.	50 Min
5	Introduction of graph and associated terminology, ‘set, linked and matrix’	50 Min
6	Graph traversal techniques: BFS, DFS	50 Min
7	Operations on graphs (Path Matrix and shortest Path),	50 Min
8	Minimum spanning trees, Applications of graphs..	50 Min
	Total	6.6 hrs

Module/Unit 4-PARALLEL AND DISTRIBUTED DATABASES

S.No	Name of Topic	Hours
1	Introduction to file system, Dictionary Abstract Data Type,	50 Min
2	Implementation of Dictionaries, Review of Hashing,,	50 Min
3	Hash Function, Collision Resolution Techniques in Hashing,	50 Min
4	Sets, list representation of sets, Applications of sets,	50 Min
5	Skip lists: Search and Update Operations on Skip Lists,	50 Min
6	Probabilistic Analysis of Skip Lists,	50 Min
7	Deterministic Skip Lists	50 Min
	Total	5.8 hrs

Text/ Reference Books:

1. Data Structures using C by A. M. Tenenbaum, Langsam, Moshe J. Augentem, PHI Pub. 19

2. Data Structures and Algorithms by A.V. Aho, J.E. Hopcroft and T.D. Ullman, Original edition, Addison-Wesley, 1999, Low Priced Edition. Fundamentals of Data structures by Ellis Horowitz &SartajSahni, Pub, 1983,AW

3. Fundamentals of computer algorithms by Horowitz Sahni and Rajasekaran.

4. Data Structures and Program Design in C By Robert Kruse, PHI,

5. Theory & Problems of Data Structures by Jr. SymourLipschetz, Schaum's outline by TMH

6. Mark Allen Weiss, Data Structures and Algorithm Analysis in C++, 2nd Edition, Pearson, 2004 7. M T Goodrich Roberto Tamassia

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: NITIKA **Designation: Assistant professor** **Subject Name: CN**
Branch: MCA **Semester: 1ST** **Subject Code: MCA-20-103**
Date of Start: 15/09/2025 **Total Load: ...36hr** **Date of Completion:**

Module/Unit-1: .....

S.No	Name of Topic	Hours
1	Theoretical basis of data communication	50 MIN
2	analog and digital signals	50 MIN
3	asynchronous and synchronous transmission, data encoding and modulation	50 MIN
4	broadband and base band transmission	50 MIN
5	pulse code modulation, bandwidth, channel	50 MIN
6	baud rate of transmission	50 MIN
7	multiplexing	50 MIN
8	transmission medium	50 MIN
9	transmission errors	50 MIN
10	error detection and correction	50 MIN
	Total	8.3 HOURS

Module/Unit 2

S.No	Name of Topic	Hours
1	**Local area networks**	50 MIN
2	**metropolitan area network, wide area network**	50 MIN
3	**wireless network, internetworking**	50 MIN
4	**switched multi-megabit data services**	50 MIN
5	**X.25, frame relay**	50 MIN
6	**narrow band and board ISDN asynchronous transfer modes**	50 MIN
7	**Network Reference Models: Layered architectures**	50 MIN
8	**protocol hierarchies**	50 MIN
9	**interface and services**	50 MIN
10	**ISO-OSI reference model**	50 MIN
11	**TCP/ IP reference model**	50 MIN
12	**internet protocol stack**	50 MIN
	Total	10 HOURS

Module/Unit 3

S.No	Name of Topic	Hours
1	**Framing, error control**	50 MIN
2	**flow-control; sliding window protocol**	50 MIN
3	**Data link layer of Internet and ATM**	50 MIN
4	**Medium Access Control Sub-layer**	50 MIN

5	**CSMA/CD protocol switched**	50 MIN
6	**fast Ethernet, token ring**	50 MIN
7	**IEEE standards for LAN and MAN**	50 MIN
8	**Satellite networks.**	50 MIN
	TOTAL	6.6 HOURS

Module/Unit 4

S.No	Name of Topic	Hours
1	**Switching mechanism: Circuit switching**	50 MIN
3	**cell switching**	50 MIN
4	**routing and congestion controL**	50 MIN
5	**TCP/IP protocol architecture**	50 MIN
6	**introduction of tunnelling**	50 MIN
7	**Virtual Private Networks (VPN)**	50 MIN
8	**Network Applications: File transfer protocol**	50 MIN
9	**electronic mail**	50 MIN
10	**World Wide Web**	50 MIN
	TOTAL	8.3 HOURS

Reference

1. A.S. Tanebaum : Computer Networks (4th ed.), Prentice-Hall of India.

2. W. Tomasi : Introduction to Data Communications and Networking, Pearson, Education.

3. P.C. Gupta : Data Communications and Computer Networks, Prentice-Hall of India.

4. BehrouzForouzan and S.C., Fegan : Data Communications and Networking, McGraw

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JUL-DEC 2025)

Name of Teacher: Amar Kr. Gupta **Designation: A.P** **Subject Name: DBMS**
Branch: MCA **Semester: 1ST** **Subject Code: MCA-20- 105**
Date of Start: 08/09/2025 **Total Load: 34 hrs** **Date of Completion: 21/11/2025**

Module/Unit-1: OVERVIEW OF DATABASE MANAGEMENT SYSTEM

S.No	Name of Topic	Hours
1	Introduction to Database, Purpose of Database Systems	50 Min
2	Characteristics of Database Approach, advantages, and disadvantages of database system.	50 Min
3	Database Administrator, Database Designers, DBMS users	50 Min
4	Database system Structure, Storage Manager	50 Min
5	Query Processor. Introduction to Client/Server architecture,	50 Min
6	Various views of data	50 Min
7	Database Models.	50 Min
8	Three levels architecture of Database Systems	50 Min
9	Attributes and Entity sets	50 Min
10	Relationship and Relationship sets	50 Min

11	Mapping Constraints, Keys.	50 Min
12	Entity Relationship Diagram,	50 Min
13	Reduction of E-R diagram into tables.	50 Min
	Total	10.8 hrs

Module/Unit 2- Relationship Model

S.No	Name of Topic	Hours
1	Introduction to the Relational Model	50 Min
2	Integrity Constraints Over relations, Enforcing Integrity constraints.	50 Min
3	Relational Algebra, Selection and projection set operations,	50 Min
4	Renaming, Joins, Division, aggregate operations	50 Min
5	Relational calculus- Tuple relational Calculus,	50 Min
6	Domain relational calculus, Query processing and Optimization.	50 Min
7	Problems Caused by redundancy, Decompositions	50 Min
8	Problem related to decomposition, Functional dependencies	50 Min
9	Minimal Cover, Attribute Closure	50 Min
10	FIRST, SECOND, THIRD Normal forms, BCNF	50 Min
11	Lossless join Decomposition, Dependency preserving Decomposition	50 Min
12	Schema refinement in Database Design, Multi valued Dependencies	50 Min
13	Fourth and Fifth Normal Form.	50 Min

	Total	10.8 hrs

Module/Unit 3-Overview of Transaction Management

S.No	Name of Topic	Hours
1	ACID Properties, Transaction States	50 Min
2	Transactions and Schedules, Concurrent Execution of transaction.	50 Min
3	Serializability and recoverability	50 Min
4	Introduction to Lock Management, Lock Conversions	50 Min
5	Specialized Locking Techniques	50 Min
6	Time stamp based concurrency control	50 Min
7	Dealing with Dead Locks, Introduction to crash recovery	50 Min
8	Log based recovery, Check points.	50 Min
	Total	6.6 hrs

Module/Unit 4-PARALLEL AND DISTRIBUTED DATABASES

S.No	Name of Topic	Hours
1	Basic concepts	50 Min
2	Architectures,parallelization of operations,	50 Min
3	Methods for data distribution: fragmentation and replication	50 Min
4	Catalog management	50 Min
5	Distributed query processing	50 Min
6	Semi-joins and bloom-joins	50 Min
7	Distributed transaction processing.	50 Min
	Total	5.8 hrs

Text/ Reference Books:

1. lmasriNavate: Data base Management System, Pearson Education
2. Raghurama Krishnan: Data base Management Systems, Johannes Gehrke, Tata McGraw Hill Latest Edition.
3. Siberschatz, Korth: Data base System Concepts, McGraw Hill, and latest edition.

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NGF COLLEGE OF ENGINEERING TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: **Rajan Kumar Designation:Assistant professor SubjectName:OOPS**
Branch:MCA Semester:1st Subject Code: MCA-20-107
Date of Start:8 sep Total Load:20 Hours 22 min Date of Completion:21 Nov

UNIT-1:-Object Oriented Programming concepts

Name	Mins
1 Comparison: Procedural vs OOP	50
2 Characteristics of OOP:	50
3 User-Defined Types:	50
4 CLASS AND OBJECT	50
5 Recursion	50
6 ARRAYS AND POINTERS	50

Total Hour:-5 Hours

UNIT-2:-Abstracting Mechanism and Memory Management

ame	Mins
1 Classes Private and Public	50
2 Constructor and Destructor Member function	50
3 Static members References	50
4 Memory Management: new delete Object copying	50
5 Copy constructor Assignment operator	50
6 this Input/Output	50

Total Hour:-5 Hours

UNIT-3:-Inheritance and Polymorphism

Name	Mins
1 Derived Class and Base Class Different types of Inheritance	50
2 Overriding member function Abstract Class	50
3 Public and Private Inheritance Ambiguity in Multiple Inheritances	50
4 Virtual function Friend function	50
5 Static function Operator Overloading	50
6 Template and Standard Template Library (STL): Template classes Declaration	50
7 Template functions Namespace String	50
8 Iterators Hashes Streams	50

Total Hour:-6 Hours 6min

UNIT-4:-Exception and file handling

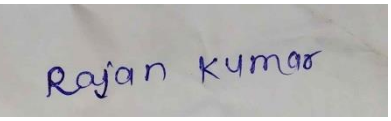
Name	Mins
1 Exception and derived class Function exception declaration	50
2 Unexpected exception Exception when handling an exception	50
3 Resource capture and release	50
4 I/O streams fos.open	50
5 fos.close I/O stream libraries	

Total Hour:-4 H 16 min

Text Books / Reference books

Text/ Reference Books:

1 Bjarne Stroustrup, The C++ programming language, Pearsons education
2 Robert Lafore, Object oriented programming using C++,PHI
3 Paul Deitel & Harvey Deitel, C++ How to program , Pearsons education
4. Yashawant Kanetkar, Let Us C++, BFB



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Keshav Maheshwari **Designation:Lecture** **SubjectName: Operating system**

Branch:MCA **Semester:1st** **Subject Code: MCA-20-117**

Date of Start: 8sep **Total Load:48 hrs50mns** **Date of Completion: 21 nov**

Unit-1: FUNDAMENTAL OF OPERATING SYSTEM

S.No	Name of Topic	Hours
1	Introduction to Operating System,	50
2	its need and operating System services,	50
3	Early systems,	50
4	Structures - Simple Batch, Multi programmed,	50
5	timeshared,	50
6	Personal Computer,	50
7	Parallel, Distributed Systems,	50
8	Real-Time Systems.	50
9	Process Management:	50
10	Process concept and context,	50
11	Process Control Block,	50

12	Operation on processes,	50
13	Threads,	50
14	Inter-process Communication.	50
	TOTAL	11 HRS 40 MNS

Unit 2-CPU SCHEDULING

S.No	Name of Topic	Hours
1	Basic concepts,	50
2	scheduling criteria,	50
3	scheduling algorithms	50
4	FCFS	50
5	SJF,	50
6	Premptive and non-premptive,	50
7	Round Robin	50
8	Queue Algorithms.	50
9	Deadlocks	50
10	Deadlock characterization	50
11	Prevention and Avoidance	50
12	Deadlock Detection	50
13	Recovery Methods for handling deadlocks	50
14	Banker'sAlgorithm	50
	TOTAL	11HRS 40 MNS

Unit-3: MEMORY MANAGEMENT

S.No	Name of Topic	Hours
1	Logical versus Physical address space,	50
2	Swapping	50
3	Contiguous allocation	50
4	Paging	50
5	Segmentation.	50
6	Virtual Memory	50
7	Demand paging	50
8	Performance of demand paging	50
9	Page replacement	50
10	Page replacement algorithms	50
11	Thrashing	50
	TOTAL	9HRS 10MNS

UNIT-IV: Disk Scheduling and File Management

S.No	Name of Topic	Hours
1	Disk structure	50
2	Disk Scheduling Algorithms	50
3	FCFS	50
4	SSTF	50
5	SCAN	50
6	C-SCAN	50
7	LOOK	50
8	C- LOOK	50
9	Type of File systems,	50
10	File Structure,	50

11	File allocation methods	50
12	Contiguous allocatio	50
13	Linked allocation	50
14	Indexed allocation,	50
15	Free space management	50
16	Bit vector	50
17	Linked list,	50
18	Grouping,	50
19	Counting.	50
	TOATAL	15HRS50MIN

Text Books / Reference books

1. T K Attwood. DJ parry-Smith, Introduction to Bioinformatics, Pearson Education, 1st Edition, 11th Reprint 2005.

2. S. Ignacimuthu, S.J., Basic Bioinformatics, Narosa Publishing House, 1995.

3. Neil C. Jones and Pavel A. Pevzner, An Introduction to Bioinformatics Algorithms, MIT Press,

First Indian Reprint 2005.

4. Harshawardhan P BAL, Perl Programming for Bioinformatics, Tata McGraw Hill, 2003.

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JUL-DEC 2025)

Name of Teacher: POOJA **Designation: A.P** **Subject Name: yoga and meditation**
Branch: MCA **Semester: 1ST** **Subject Code: AUD 09**
Date of Start: 08/09/2025 **Total Load: 15 hrs 50 min** **Date of Completion: 21/11/2025**

Module/Unit-1:

S.No	Name of Topic	Hours
1	Introduction to yoga and its different levels, food habits	50 Min
2	Sanskar of a yogi, PatanjaliYogsutra,	50 Min
3	its importance in life, benefits and history of yoga	50 Min
	Total	2 hr 30min

Module/Unit 2-

S.No	Name of Topic	Hours
1	Meditation and its relation with yoga, mind relaxation,	50 Min
2	development of morality and ethics	50 Min
3	prayer and its meaning, its importance in life	50 Min
4	benefits and history of meditation.,	50 Min
	Total	3hr 20 min

Module/Unit 3

S.No	Name of Topic	Hours
1	Pranayam and its introduction, types of pranayam,	50 Min

2	breathing exercises, preliminary preparation before pranayam,	50 Min
3	its importance and benefits in life.	50 Min
	Total	2 hrs 30 min

Module/Unit 4

S.No	Name of Topic	Hours
1	Practice of different types of Pranayam: Anulom-Vilom,	50 Min
2	Kapalbhati, NadiShodhan,	50 Min
3	Agni Sar, Bhastrika, Bharamari etc.,	50 Min
	Total	2 hrs 30min

Module/Unit 5

S.No	Name of Topic	Hours
1	Mantra and their importance, introduction to some chanting mantras,,	50 Min
2	practicing some of mantrasGayatri Mantra,	50 Min
3	NamokarJaap etc.	50 Min
	Total	2 hrs 30min

Module/Unit 6

S.No	Name of Topic	Hours
1	Aasan and their types, benefits of different aasans	50 Min
2	practicing of different aasans: Padamaasan	50 Min
3	surya-namaskar, tadaasan, navaasan,	50 Min

4	gomukhaasan, bhujangaasan etc.	
	Total	2 hr 30min

Text/ Reference Books:

1. PatanjaliYogsutra

2. YogManjari

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