



**DEPARTMENT
OF
COMPUTER SCIENCE & ENGINEERING (DATA SCIENCE)**

Lesson Plan

Session: Aug. -Dec., 2025

Semester: 5th

Name: _____

University Roll Number: _____

BUDDHA INSTITUTE OF TECHNOLOGY

CL-1 Sector - 7, GIDA, Gorakhpur - 273209 (U.P)

Phones: (0551) 2990413

Index

Timetable

Evaluation scheme

Subject 1 DATABASE MANAGEMENT SYSTEM (DBMS)

Subject 2 INTRODUCTIONS TO DATA VISUALIZATION (DAV)

Subject 3 DESIGNS AND ANALYSIS OF ALGORITHM (DAA)

Subject 4 DATA WAREHOUSING AND DATA MINING

Subject 5 CLOUD COMPUTING

Subject 6 ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE

PPC-E PLACEMENT PREPARATION CLASS (ENGLISH)

Techedge (MERN STACK)

Lab 1 DBMS LAB

Lab 2 DAV LAB

Lab 3 DAV LAB

TIME TABLE

BUDDHA INSTITUTE OF TECHNOLOGY, GIDA, GORAKHPUR											
CLASS TIME TABLE: 2025-26 (ODD)											
Dept.: CSE-DS		w.e.f.: 18 AUGUST, 2025			Semester: 5 TH			Section: C		Room No.: 414	
Day / Time	9:10-10:05 AM	10:05-11:00 AM	SHORT BREAK (15 Min.)	11:15-12:10 PM	12:10-01:05PM	LUNCH BREAK (40 Min.)	01:45-02:40 PM	2:40-3:35 PM	3:35-4:30 PM		
MON	DAA (SP)	EITK (RKT)		DAA-LAB-(C1)-SP-L-304			DWDM (ANT)	DBMS (SK)	DAV (AA)		
TUES	DAV (AA)	DBMS (SK)		MP-LAB-(C2)-PK-L-305			PPC-E (SKT)	DWDM (ANT)	CC (PK)		
WED	DBMS (SK)	DAV (AA)		DBMS-LAB-(C1)-SK-L-401			CC (PK)	DAA (SP)	PPC-E (SKT)		
THU	TECHEDGE-LAB-(C1+C2)-BB-L-306			DAV-LAB-(C1)-AA-L-304			CC (PK)	DAA (SP)	DAV (AA)		
FRI	DBMS (SK)	DAA (SP)		DAA-LAB-(C2)-SP-L-305			DWDM (ANT)	DAV (AA)	CSEP (AA)		
SAT	DWDM (ANT)	DAA (SP)		MP-LAB-(C1)-PK-L-401							
			DBMS-LAB-(C2)-SK-L-402								
			CC (PK)								
			DBMS (SK)								

	SUBJECT CODE	SUBJECT NAME	FACULTY NAME	LECTURE / WEEK
ACADEMICS	BCS - 501	DATABASE MANAGEMENT SYSTEM (DBMS)	MR. SATISH KUMAR (SK)	5
	BCDS - 501	INTRODUCTION TO DATA ANALYTIC AND VISUALIZATION (DAV)	MS. ANJUM AHSAN (AA)	5
	BCS - 503	DESIGN AND ANALYSIS OF ALGORITHM (DAA)	MR. SHAILESH PATEL (SP)	5
	BCS - 058	DATA WAREHOUSE AND DATA MAINING (DWDM)	MR. ANURAG TRIPATHI (ANT)	4
	BCAM - 051	CLOUD COMPUTING (CC)	MR. PANKAJ KUMAR (PK)	4
	BNC - 502	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE (EITK)	DR. RAKESH KUMAR TIWARI (RKT)	1
	BCS - 551	DBMS LAB	MR. SATISH KUMAR (SK)	2
	BCDS - 551	DAV LAB	MS. ANJUM AHSAN (AA)	2
	BCS - 553	DAA LAB	MR. SHAILESH PATEL (SP)	2
	BCS - 554	MINI PROJECT LAB (MP LAB)	MR. PANKAJ KUMAR (PK)	2
SKILL DEVELOPMENT	-	CSEP	MS. ANJUM AHSAN (AA)	1
	-	PRE-PLACEMENT CLASS-ENGLISH (PPC-E)	MR. SANTOSH KUMAR TRIPATHI (SKT)	2
	-	TECHEDGE LAB	MR. RISHABH SRIVASTVA (RB)	4
SELF-LEARNING	-	LIBRARY	-	0
TOTAL				39

Dr. Shashank Srivastav
HOD

EVALUATION SCHEME

Subject Code	Subject	Sessional Marks	Exam Marks	Total Marks
THEORY SUBJECTS				
BCS 501	DATABASE MANAGEMENT SYSTEM (DBMS)	30	70	100
BCDS 501	INTRODUCTIONS TO DATA VISUALIZATION (DAV)	30	70	100
BCS 503	DESIGNS AND ANALYSIS OF ALGORITHM (DAA)	30	70	100
BCS 058	DATA WAREHOUSING AND DATA MINING	30	70	100
BCAM 051	CLOUD COMPUTING	30	70	100
BNC 502	ESSENSE OF INDIAN TRADITIONAL KNOWLEDGE	30	70	100
PRACTICAL/DESIGN/DRAWING				
BCS 551	DBMS LAB	50	50	100
BCDS 551	DAV LAB	50	50	100
BCS 553	DAV LAB	50	50	100



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN DETAILS

Semester: V	Section: C	Course Code: BCS501	Contact Hours /week: 5
Course Name: Database Management System			# of credits:4
Faculty name:Mr. Satish Kumar			Designation: Assistant Professor
Sessional Marks:30	End Semester Examination Marks:70		University Exam Hours: 3

Prerequisites if any:
Data, Rows, Columns, Tables

Content delivery methods:	By Face-to-face delivery, Presentation, Tutorial etc.
---------------------------	---

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Introduction: Overview, Database System vs File System, Database System Concept and Architecture, Data Model Schema and Instances, Data Independence and Database Language and Interfaces, Data Definitions Language, DML, Overall Database Structure. Data Modeling Using the Entity Relationship Model: ER Model Concepts, Notation for ER Diagram, Mapping Constraints, Keys, Concepts of Super Key, Candidate Key, Primary Key, Generalization, Aggregation, Reduction of an ER Diagrams to Tables, Extended ER Model, Relationship of Higher Degree.	15	C01
2	Relational data Model and Language: Relational Data Model Concepts, Integrity Constraints, Entity Integrity, Referential Integrity, Keys Constraints, Domain Constraints, Relational Algebra, Relational Calculus, Tuple and Domain Calculus. Introduction on SQL: Characteristics of SQL, Advantage of SQL. SQL Data Type and Literals. Types of SQL Commands. SQL Operators and Their Procedure. Tables, Views and Indexes. Queries and Sub Queries. Aggregate Functions. Insert, Update and Delete Operations, Joins, Unions, Intersection, Minus, Cursors, Triggers, Procedures in SQL/PL SQL.	12	C02



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

3	Data Base Design and Normalization: Functional dependencies, Normal forms, first, second, and third normal forms, BCNF, inclusion dependence, loss less join decompositions, normalization using FD, MVD, and JDs, alternative approaches to database design.	13	C03
4	Transaction Processing Concept: Transaction System, Testing of Serializability, Serializability of Schedules, Conflict and View Serializable Schedule, Recoverability, Recovery from Transaction Failures, Log Based Recovery, Checkpoints, Deadlock Handling. Distributed Database : Distributed Data Storage, Concurrency Control, Directory System.	15	C04
5	Concurrency Control Techniques: Concurrency Control, Locking Techniques for Concurrency Control, Time Stamping Protocols for Concurrency Control, Validation Based Protocol, Multiple Granularity, Multi Version Schemes, Recovery with Concurrent Transaction, Case Study of Oracle.	16	C05

COURSE OUTCOMES: At the end of the Course, the Student will be able to:

C01	Apply knowledge of database for real life applications.
C02	Construct queries using SQL syntax and Relational Algebra.
C03	Explain different normal forms to solve the problems of redundancy.
C04	Explain the concept of Transaction Processing.
C05	Illustrate the concept of Concurrency control and Failure Recovery.



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

Mapping of CO v/s PO:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C01	3	2	2	2	1	-	-	-	-	-	1	2
C02	3	2	2	2	1	-	-	-	-	-	2	2
C03	2	1	1	1	1	-	-	-	-	-	2	2
C04	2	1	1	1	1	-	-	-	-	-	2	2
C05	2	1	1	1	1	-	-	-	-	-	2	2
Average	2.4	1.4	1.4	1.4	1	-	-	-	-	-	1.8	2

Mapping of CO v/s PSO:

	PSO1	PSO2	PSO3
C01	2	2	2
C02	2	2	2
C03	1	1	2
C04	1	1	2
C05	1	1	2
Average	1.4	1.4	2

Correlation levels: 1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

Topics to be covered beyond syllabus

Group by and Having clause.



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Lecture	Module	Scheduled			Conducted			
		Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students
1	I	Introduction about COs & POs related to the course and Introduction to subject		CO1				
2		Introduction: Overview, Database System vs File System	L2	CO1				
3		Database System Concept and Architecture	L2	CO1				
4		Data Model Schema and Instances, Data Independence and Database Language and Interfaces	L2	CO1				
6		Data Definition Language,DML	L2	CO1				
7		Overall Database Architecture	L2	CO1				
8		Data Modelling Using the Entity Relationship Model: ER Model Concepts	L2	CO1				
9		Tutorial-1		CO1				
10		Notation for ER Diagram, Mapping Constraints, Keys	L2	CO1				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

11		Concepts of Super Key, Candidate Key, Primary Key	L2	CO1				
12		Generalization, Aggregation	L2	CO1				
13		Reduction of an ER Diagrams to tables	L2	CO1				
14		Extended ER Model, Relationship of Higher Degree	L2	CO1				
15		Tutorial-2		CO1				
16		Relational data Model and Language: Relational Data Model Concepts, Integrity Constraints	L2	CO2				
17		Entity Integrity, Referential Integrity	L3	CO2				
18		Key Constraint, Domain constraints	L3	CO2				
19	II	Relational Algebra, Relational Calculus	L3	CO2				
20		Tuple and Domain Calculus	L2	CO2				
21		Tutorial 3		CO2				
22		Introduction on SQL: Characteristics of SQL, Advantage of SQL	L2	CO2				
23		SQL Data Type and Literals. Types of SQL Commands,	L3	CO2				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

24	SQL Operators and Their Procedure	L3	C02					
24	Queries and Sub Queries Procedures in SQL/PL SQL	L3	C02					
25	Aggregate Functions, Joins, Unions, Intersection, Groupby and Having Clause	L3	C02					
26	Insert, Update and Delete Operations Triggers	L3	C02					
27	Tutorial-4		C02					
28	Data Base Design and Normalization	L3	C03					
29	Functional dependencies	L3	C03					
30	Normal forms, first	L2	C03					
31	Second	L3	C03					
32	Third normal forms	L3	C03					
33	Tutorial-5		C03					
34	Revision-1		C03					
35	BCNF	L2	C03					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

36		Inclusion dependence, loss less join decompositions	L2	C03					
37		Normalization using FD	L3	C03					
38		MVD, and JDs	L3	C03					
39		Alternative approaches to database design	L3	C03					
40		Tutorial-6			C03				
41		Transaction Processing Concept:	L2	C04					
42	IV	Testing of Serializability	L2	C04					
43		Testing of Serializability Contd.	L2	C04					
44		Serializability of Schedules, Conflict & View Serializable Schedule	L2	C04					
45		Recoverability, Recovery from Transaction Failures	L2	C04					
46		Tutorial-7			C04				
47		Revision-2			C04				
48		Log Based Recovery	L2	C04					
49		Checkpoints	L2	C04					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

50	Deadlock Handling	L2	C04					
51	Distributed Database, Distributed data storage	L2	C04					
52	Concurrency Control	L2	C04					
53	Directory System	L2	C04					
54	Tutorial -8		C04					
55	Revision-3		C04					
56	Concurrency Control Techniques	L3	C05					
57	Concurrency Control	L2	C05					
58	Locking Techniques for Concurrency Control	L2	C05					
59	Time Stamping Protocols for Concurrency Control	L2	C05					
60	Tutorial-9		C05					
61	Validation Based Protocol	L2	C05					
62	Multiple Granularity	L2	C05					
63	Revision-6		C05					
64	Multi Version Schemes	L2	C05					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

65	Recovery with Concurrent Transaction	L2	C05					
66	Case Study of Oracle	L2	C05					
67	Case Study of Oracle (Contd.)	L2	C05					
68	Case Study of Oracle (Contd.)	L2	C05					
69	Tutorial-10		C05					

Class Test	Syllabus
CT-01	Class 1-Class 22
CT-02	Class 23-Class 45
PRE-AKTU	Full Syllabus



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

***Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

TextBooks:

T1.Database Concept” Korth, Silbertz, Sudarshan,” ,6th Edition, McGraw Hill 2011.

T2. Elmasri, Navathe, “Fundamentals of Database Systems”, Addison Wesley.

Faculty Sign

HOD's Sign



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN DETAILS

Semester: V	Section: C	Course Code: BCDS 501	Contact Hours /week: 5
Course Name: Data Analytics & Visualization			# of credits: 3
Faculty name: Mrs. Anjum Ahsan			Designation: Assistant Professor
Sessional Marks: 30	End Semester Examination Marks:70		University Exam Hours: 3

Prerequisites if any:
DL,AI

Content delivery methods:	By Face to face delivery, Presentation, Tutorial etc.
---------------------------	---

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Introduction to Data Analytics: Sources and nature of data, classification of data (structured, semi-structured, unstructured), characteristics of data, introduction to Big Data platform, need of data analytics, evolution of analytic scalability, analytic process and tools, analysis vs reporting, modern data analytic tools, applications of data analytics. Data Analytics Lifecycle: Need, key roles for successful analytic projects, various phases of data analytics lifecycle – discovery, data preparation, model planning, model building, communicating results, operationalization	14	C01
2	Data Analysis: Regression modeling, multivariate analysis, Bayesian modeling, inference and Bayesian networks, support vector and kernel methods, analysis of time series: linear systems analysis & nonlinear dynamics, rule induction, neural networks: learning and generalisation, competitive learning, principal component analysis and neural networks, fuzzy logic: extracting fuzzy models from data, fuzzy decision trees, stochastic search methods.	11	C02
3	Mining Data Streams: Introduction to streams concepts, stream data model and architecture, stream computing, sampling data in a stream, filtering streams, counting distinct elements in a stream, estimating moments, counting oneness in a window, decaying window, Real-time Analytics Platform (RTAP) applications, Case studies – real time	12	C03



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

C04	2	2	2	2	-	-	-	-	-	-	-	-
C05	2	2	2	2	-	-	-	-	-	-	-	-
Average	2.00	2.00	2.00	2.00	-	-	-	-	-	-	-	-

Mapping of CO v/s PSO:

	PSO1	PSO2	PSO3
C01	1	-	-
C02	1	-	-
C03	1	-	-
C04	1	-	-
C05	1	-	-
Average	1.00	-	-

Correlation levels: 1-Slight (Low) 2-Moderate (Medium) 3-Substantial (High)

Topics to be covered beyond syllabus	Havel-Hakimi Algorithm
---	------------------------



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Lecture	Module	Scheduled			Conducted			
		Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students
1	I	Introduction to Data Analytics	L2	CO1				
2		Source of Nature of Data	L2	CO1				
3		Classification of Data	L2	CO1				
4		Characterstics of Data	L2	CO1				
5		Introduction to Big Data Platform	L2	CO1				



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

6		Tutorial-1	L2	C01					
7		Evolution of analytics Scalability		C01					
8		Analytics Process and Tool	L2	C01					
9		Analysis Vs reporting	L2	C01					
10		Modern Data Analytics Tools	L2	C01					
11		Application of Data Analytics	L2	C01					
12		Data Analysis Lifecycle	L2	C01					
13		Need, key roles for successful analytics project,	L2	C01					
14		Tutorial-2		C01					
15	II	Data Prepration	L2	C02					
16		Model Planning	L2	C02					
17		Model Building	L3	C02					
18		Communication result	L3	C02					



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

19		Operationlization	L3	C02				
20		Tutorial-3		C02				
21		Data Analysis	L3	C02				
22		Interface and Bayesian	L3	C02				
23		Regression Modeling	L3	C02				
24		Multivariate analysis	L3	C02				
25		Bayesian Modeling	L3	C02				
26		Tutorial-4	L3	C02				
27	III	Support vector & Kernel Method	L3	C03				
28		Analysis of time series	L3	C03				
29		Linear system analysis & nonlinear dynamics	L3	C03				
30		Rule Induction	L3	C03				
31		Neural Network	L3	C03				
32		Learning & Genralization	L3	C03				



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

45		Computational Support – Issues – Different Types of Tasks	L4	CO4				
46		Data representation – Limitation	L4	CO4				
47		Display Space- Rendering Time – Navigation Links.Human Vision	L4	CO4				
48			L4	CO4				
49		Tutorial-8	L4	CO4				
50		Time Limitations – Design	L4	CO4				
51		Exploration of Complex	L4	CO4				
52		Information Space	L4	CO4				
53		Figure Caption in Visual Interface	L4	CO4				
54	V	Visual Objects and Data Objects, Space Perception	L5	CO5				
55		Tutorial-9	L5	CO5				
56		Data in Space – Images, Narrative and Gestures for Explanation	L5	CO5				
57		Data in Space – Images, Narrative	L5	CO5				
58		Gestures for Explanation	L5	CO5				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

59	Revision Unit-02	L5	C05					
60	Revision Unit-03	L5	C05					
61	Tutorial-10	L5	C05					

***Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

References:

1. Michael Berthold, David J. Hand, **Intelligent Data Analysis**, Springer
2. Anand Rajaraman and Jeffrey David Ullman, **Mining of Massive Datasets**, Cambridge University Press.
3. Bill Franks, **Taming the Big Data Tidal wave: Finding Opportunities in Huge Data Streams with Advanced Analytics**, John Wiley & Sons.
4. John Garrett, **Data Analytics for IT Networks : Developing Innovative Use Cases**, Pearson Education
5. Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley
6. David Dietrich, Barry Heller, Beibei Yang, "Data Science and Big Data Analytics", EMC Education Series, John Wiley

Faculty Sign

HOD's Sign



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Semester: V	Section: C	Course Code: BCS 503	Contact Hours /week: 5
Course name: Design & Analysis of Algorithm			# of credits:4
Teacher's name: Mr. Shailesh Kumar Patel			Designation: Professor
Sessional Marks:30	End Semester Examination Marks: 70		University Exam Hours: 3

Prerequisites if any:			
Course Code	Course Name	Topic/s	Semester
KCS-101	Programming for Problem Solving	Operators, Decision control statement, looping & Translators	I
KCS-301	Data Structures	Stack	III

Content delivery by using	Chalk/Marker and Board, PPT and Video Lectures
----------------------------------	--

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Introduction: Algorithms, Analyzing Algorithms, Complexity of Algorithms, Growth of Functions, Performance Measurements, Sorting and Order Statistics - Shell Sort, Quick Sort, Merge Sort, Heap Sort, Comparison of Sorting Algorithms, Sorting in Linear Time.	15	CO1
2	Advanced Data Structures: Red-Black Trees, B - Trees, Binomial Heaps, Fibonacci Heaps, Tries, Skip List	12	CO2
3	Divide and Conquer with Examples Such as Sorting, Matrix Multiplication, Convex Hull and Searching. Greedy Methods with Examples Such as Optimal Reliability Allocation, Knapsack, Minimum Spanning Trees - Prim's and Kruskal's Algorithms, Single Source Shortest Paths - Dijkstra's and Bellman Ford Algorithms.	11	CO3
4	Dynamic Programming with Examples Such as Knapsack. All Pair Shortest Paths - Warshal's and Floyd's Algorithms, Resource Allocation Problem. Backtracking, Branch and Bound with Examples Such as Travelling Salesman Problem, Graph Coloring, n-Queen Problem, Hamiltonian Cycles and Sum of Subsets.	13	CO4
5	Selected Topics: Algebraic Computation, Fast Fourier Transform, String Matching, Theory of NP-Completeness, Approximation Algorithms and Randomized Algorithms	10	CO5



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

COURSE OUTCOMES: At the end of the Course, the Student will be able to:

C01	Analyze the asymptotic performance of various algorithms.
C02	Construct an algorithm for advanced data structure.
C03	Utilize greedy & divide and conquer approaches to solve a problems.
C04	Build an algorithm using dynamic programming, backtracking & branch and bound methods to solve a problem.
C05	Interpret various approximation algorithm & solution to P type, NP type, NPC and NP hard problems.

Mapping of CO v/s PO:

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
C01	2	2	1	-	-	-	-	-	-	-	-	1
C02	2	2	1	-	-	-	-	-	-	-	-	1
C03	2	2	1	-	-	-	-	-	-	-	-	1
C04	2	2	1	-	-	-	-	-	-	-	-	1
C05	2	2	1	-	-	-	-	-	-	-	-	1
Average	2	2	1	-	-	-	-	-	-	-	-	1

	PSO1	PSO2	PSO3
C01	2	1	-
C02	2	1	-
C03	2	1	-
C04	2	1	-
C05	2	1	-
Average	2	1	-

Correlation levels: 1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

Gap in the syllabus	NA
----------------------------	----

Topics to be covered beyond syllabus	Recurrence Relation, Longest Common Subsequence & Matrix Chain Multiplications
---	--



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Lecture #	Module #	Topics	*RBT Levels	Course Outcome Mapping	Planned Date	Actual Date	Faculty Sign	Remarks
1	I	Algorithms	L2	CO1				
2		Analyzing Algorithms	L2					
3		Complexity of Algorithms	L2					
4		Growth of Functions	L2					
5		Growth of Functions (Contd.)	L2					
6		Growth of Functions (Contd.)	L2					
7		Tutorial 1						
8		Performance Measurements	L2					
9		Sorting and Order Statistics - Shell Sort	L2					
10		Quick Sort	L2					
11		Merge Sort, Heap Sort	L2					
12		Comparison of Sorting Algorithms	L2					
13		Sorting in Linear Time	L2					
14		Tutorial 2						
15	II	Red-Black Trees,	L2	CO2				
16		Red-Black Trees (Contd.)	L2					
17		Red-Black Trees (Contd.)	L3					
18		B - Trees	L3					
19		B - Trees (Contd.)	L3					
20		Tutorial 3						
21		Binomial Heaps	L3					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

22		Binomial Heaps (Contd.)	L3					
23		Fibonacci Heaps	L3					
24		Fibonacci Heaps (Contd.)	L3					
25		Tries, Skip List	L3					
26		Tutorial 4						
27		Divide and Conquer with Examples Such as Sorting	L3					
28		Matrix Multiplication	L3					
29		Knapsack, Convex Hull and Searching	L3					
30		Longest Common Sub- sequence (LCS)	L3					
31		Greedy Methods with Examples Such as Optimal Reliability Allocation	L3					
32		Tutorial 5	L3	C03				
33	III	Revision Class 1	L3					
34		Minimum Spanning Trees – Prim’s Algorithms	L3					
35		Minimum Spanning Trees –Kruskal’s Algorithms						
36		Single Source Shortest Paths - Dijkstra’s						
37		Bellman Ford Algorithms	L3					
38		Tutorial 6	L3					
39		Dynamic Programming with Examples Such as Knapsack	L3					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

40	IV	All Pair Shortest Paths – Warshal’s and Floyd’s Algorithms		C04					
41		Revision Class 2	L3						
42		Resource Allocation Problem, Backtracking	L3						
43		Branch and Bound with Examples Such as Travelling Salesman Problem	L3						
44		Tutorial 7	L3						
45		Graph Colouring	L3						
46		Revision Class 3							
47		n-Queen Problem	L3						
48		Revision Class 4	L3						
49		Sum of Subsets Hamiltonian Cycles							
50		Tutorial 8	L3		C05				
51		Revision Class 5	L3						
52		Algebraic Computation							
53		Fast Fourier Transform	L3						
54	Theory of NP- Completeness	L3							
55	Approximation Algorithms								
56	Revision Class 6	L2							
57	Tutorial 9	L2							
58	Randomized Algorithms	L3							
59	Randomized Algorithms (Cont.)								



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-DS

ACADEMIC YEAR 2025-26 (ODD Semester)

60		Tutorial 9	L3					
61		Revision Class 7						

***Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

References:

Text books :(As per University / Board syllabus)

T1. Thomas H. Coreman, Charles E. Leiserson and Ronald L. Rivest, “Introduction to Algorithms”, Printice Hall of India.

T2.E. Horowitz & S Sahni, "Fundamentals of Computer Algorithms",

Faculty Sign

HOD's Sign



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN DETAILS

Semester: V	Section: C	Course Code: BCS 058	Contact Hours /week: 4
Course Name: Data Warehousing & Data Mining			No. of credits: 3
Faculty name: Mr. Anurag Tripathi			Designation: Assistant Professor
Sessional Marks: 30	End Semester Examination Marks:70		University Exam Hours: 3

Prerequisites if any:
DATABASE THEORY

Content delivery methods:	By Marker, ICT Tools delivery, Presentation, Tutorial etc.
---------------------------	--

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Data Warehousing: Overview, Definition, Data Warehousing Components, Building a Data Warehouse, Warehouse Database, Mapping the Data Warehouse to a Multiprocessor Architecture, Difference between Database System and Data Warehouse, Multi Dimensional Data Model, Data Cubes, Stars, Snow Flakes, Fact Constellations, Concept		CO1
2	Data Warehouse Process and Technology: Warehousing Strategy, Warehouse /management and Support Processes, Warehouse Planning and Implementation, Hardware and Operating Systems for Data Warehousing, Client/Server Computing Model & Data Warehousing. Parallel Processors & Cluster Systems, Distributed DBMS implementations, Warehousing Software, Warehouse Schema Design		CO2
3	Data Mining: Overview, Motivation, Definition & Functionalities, Data Processing, Form of Data Pre-processing, Data Cleaning: Missing Values, Noisy Data, (Binning, Clustering, Regression, Computer and Human inspection), Inconsistent Data, Data Integration and Transformation. Data Reduction:-Data Cube Aggregation, Dimensionality reduction, Data Compression, Numerosity Reduction, Discretization and Concept hierarchy generation, Decision Tree.		CO3



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

Mapping of CO v/s PSO:

	PSO1	PSO2	PSO3
C01	1	-	-
C02	1	-	-
C03	1	-	-
C04	1	-	-
C05	1	-	-
Average	1.00	-	-

Correlation levels: 1-Slight (Low) 2-Moderate (Medium) 3-Substantial (High)

Topics to be covered beyond syllabus

Data Mining in AI/ML



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Lecture	Scheduled					Conducted			
	Module	Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students	Faculty Sign
1	I	Introduction to Data Warehousing – Overview & Definition	L1	CO1					
2		Data Warehousing Components	L1	CO1					
3		Building a Data Warehouse	L2	CO1					
4		Warehouse Database	L1	CO1					
5		Mapping Data Warehouse to Multiprocessor Architecture	L2	CO1					
6		Difference between Database System & Data Warehouse	L2	CO1					
7		Tutorial 1	L2	CO1					
8		Multi-Dimensional Data Model	L2	CO1					
9		Data Cubes, Slices, Dicing, Snow Flakes, Fact Constellations	L3	CO1					
10		Concepts Recap & Use Cases of Data Warehousing	L2	CO1					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

11		Tutorial 2	L2	CO1				
12	I	Warehousing Strategy	L3	CO2				
13		Warehouse Management & Support Processes	L1	CO2				
14		Warehouse Planning & Implementation	L2	CO2				
15		Hardware & Operating Systems for Data Warehousing	L2	CO2				
16		Tutorial 3	L2	CO2				
17		Client/Server Computing Model in Data Warehousing	L3	CO2				
18		Parallel Processors & Cluster Systems in Warehousing	L1	CO2				
19		Distributed DBMS in Warehousing	L1	CO2				
20		Warehouse Schema Design	L1	CO2				
21		Tutorial 4	L3	CO2				
22	III	Data Mining – Overview, Motivation, Definition	L1	CO3				
23		Data Mining Functionalities	L1	CO3				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

24		Data Processing – Form of Data	L1	CO3				
25		Data Pre-processing – Cleaning, Missing Values	L3	CO3				
26		Tutorial 5	L3	CO3				
27		Noisy Data Handling	L3	CO3				
28		Data Integration & Transformation	L3	CO3				
29		Data Reduction – Data Cube Aggregation	L3	CO3				
30		Dimensionality Reduction, Data Compression	L3	CO3				
31		Numerosity Reduction, Discretization, Concept Hierarchy Generation	L4	CO3				
32		Decision Tree in Data Mining	L4	CO3				
33		Tutorial 6	L4	CO3				
34	IV	Classification – Definition, Data Generalization	L2	CO4				
35		Analytical Characterization	L4	CO4				
36		Analysis of Attribute Relevance	L4	CO4				
37		Mining Class Comparisons	L4	CO4				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

38	Statistical Measures in Large Databases	L4	CO4					
39	Statistical-Based Algorithms & Distance-Based Algorithms	L3	CO4					
40	Decision Tree-Based Algorithms	L4	CO4					
41	Tutorial 7	L2	CO4					
42	Clustering – Introduction, Similarity & Distance Measures	L3	CO4					
43	Hierarchical & Partitional Algorithms	L3	CO4					
44	CURE & Chameleon	L3	CO4					
45	Density-Based Methods – DBSCAN, OPTICS	L3	CO4					
46	Grid-Based Methods – STING, CLIQUE	L4	CO4					
47	Model-Based – Statistical Approach, Associative Clustering	L3	CO4					
48	Large Item Sets, Basic Algorithms	L4	CO4					
49	Parallel & Distributed Algorithms	L4	CO4					
50	Neural Network Approach in Classification	L2	CO4					



BUDDHA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)
ACADEMIC YEAR 2025-26 (ODD Semester)

51		Tutorial 8	L4	CO4				
52	V	Data Visualization – Aggregation, Historical Information	L2	CO5				
53		Query Facility, OLAP Function & Tools	L3	CO5				
54		OLAP Types – ROLAP, MOLAP, HOLAP	L2	CO5				
55		Data Mining Interface & Security	L3	CO5				
56		Tuning Data Warehouse, Testing Data Warehouse	L4	CO5				
57		Tutorial 9	L5	CO5				
58		Warehousing Applications & Recent Trends	L2	CO5				
59		Types of Warehousing Applications – Web Mining, Spatial & Temporal Mining	L2	CO5				
60		Tutorial 10	L2	CO5				
61		*	Data Mining in AI/ML	L3	CO5			

Class Test	Syllabus
CT-01	Class 1-Class 26
CT-02	Class 26-Class 60
PRE-AKTU	Full Syllabus



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING Allied (DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

***Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

Text Books:

T1. Data Warehousing, Data Mining & OLAP – Tata McGraw Hill Publication by Alex Berson & Stephen J. Smith

T2. Data Mining Techniques Universities Press

Faculty Sign

HOD's Sign



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSONPLAN

Semester:V	Section:C	CourseCode:BCAM051	Contact Hours /week4
Course name:Cloud Computing			Noofcredits:3
Teacher's name:Mr. Pankaj Kumar			Designation:Assist.Prof.
SessionalMarks:50	EndSemesterExaminationMarks: 100		UniversityExamHours: 3

Prerequisites if any:			
Course Code	Course Name	Topic/s	Semester
BCS401	Operating System	Basics of Operating Systems,Memory Management,Networking Concepts in OS	

Content delivery by using	ChalkandBoard,PPTandVideoLectures
---------------------------	-----------------------------------

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Introduction To Cloud Computing:DefinitionofCloud–Evolutionof CloudComputing–UnderlyingPrinciplesofParallelandDistributed Computing–CloudCharacteristics–ElasticityinCloud–On-demand Provisioning.	08	CO1
2	Cloud-enabling Technologies Service Oriented Architecture: REST and Systems of Systems–WebServices–Publish,SubscribeModel– BasicsofVirtualization–TypesofVirtualization– Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices – VirtualizationSupportandDisasterRecovery.	08	CO2
3	Cloud Architecture, Services And Storage:Layered Cloud Architecture Design–NISTCloudComputingReferenceArchitecture–Public, Private and Hybrid Clouds – IaaS– PaaS – SaaS – Architectural DesignChallenges–CloudStorage–Storage-as-a-Service– AdvantagesofCloudStorage–CloudStorageProviders–S3.	08	CO3
4	Resource Management And Security In Cloud: InterCloudResource Management–ResourceProvisioningandResourceProvisioning Methods – Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – Software-as-a-Service Security – Security Governance–VirtualMachineSecurity–IAM–SecurityStandards.	08	CO4
5	Cloud Technologies And Advancements ■ adoop: MapReduce– VirtualBox–GoogleAppEngine–ProgrammingEnvironmentfor	08	CO5



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

	GoogleAppEngine—OpenStack—Federationinthe Cloud—FourLevelsofFederation—FederatedServicesand Applications—FutureofFederation.		
--	--	--	--

COURSE OUTCOMES: AttheendoftheCourse,theStudentwillbeableto:

C01	Articulatethemainconcepts,keytechnologies,strengthsandlimitationsofcloudcomputing
C02	Learthekeyandenablingtechnologiesthathelpinthe developmentofcloud.
C03	Develop the ability to understand and use the architecture of compute and storage cloud, serviceanddeliverymodels.
C04	Explainthecoreissuesofcloudcomputingsuchasresource managementandsecurity
C05	Toappreciatetheemergenceofcloudasthenextgeneration computingparadigm.

Mapping of CO v/s PO:

CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
C01	2	2	1	-	-	-	-	-	-	-	-	1
C02	2	2	1	-	-	-	-	-	-	-	-	1
C03	2	2	1	-	-	-	-	-	-	-	-	1
C04	2	2	1	-	-	-	-	-	-	-	-	1
C05	2	2	1	-	-	-	-	-	-	-	-	1
Average	2	2	1	-	-	-	-	-	-	-	-	1

CO	PS01	PS02	PS03
C01	2	1	-
C02	2	1	-
C03	2	1	-
C04	2	1	-
C05	2	1	-
Average	2	1	-

Correlation levels: 1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

7		Architecture /Componentofcloud computing	L 2	C 0 1					
8		Underlying principles of parallel&Distributed Computing	L 2	C 0 1					
9		ElasticityinCloud,On-demand Provisioning &ApplicationofCloud Computing	L 2	C 0 1					
10		Tutorial2							
11	II	ServiceOriented Architecture	L 2	C 0 1					
12		ServiceOriented Architecture (Contd.)	L 2	C 0 1					
13		Layered structure of SOA	L 3	C 0 1					
14		TutorialB							
15		WebServices	L 3	C 0 2					
16		WebServices(Contd.)	L 3	C 0 2					
17		REST(Contd.)	L 3	C 0 2					
18		Tutorial4							



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

19	Publisher/Subscriber Model	L 3	C 0 3					
20	Virtualization	L 3	C 0 3					
21	Virtualization(Contd.)	L 3	C 0 3					
22	RevisionClass1							
23	Virtualization ReferenceModel	L 3						
24	Tutorial4							
25	TypesofVirtualization	L 3	C 0 2					
26	Implementation level of Virtualization	L 3	C 0 2					
27	Tutorial5							
28	Implementation level of Virtualization(Contd.)		C 0 2					
29	VirtualizationatCPU, Memory, I/ODevices	L 3	C 0 2					
30	VirtualizationatCPU, Memory, I/O Devices (Contd.)	L 3	C 0 2					
31	Virtualization support &Disasterrecovery	L 3	C 0 2					
32	RevisionClass2							
33	LayeredArchitecture	L	C					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

			3	0 3				
34	III	Layered Architecture (cont.)	L 3	C 0 3				
35		PublicPrivate&Hybrid Cloud	L 3	C 0 3				
36		IaaS,PaaS,SaaS	L 3	C 0 3				
37		RevisionClass3						
38		Tutorial6	L 2					
39		Architecturaldesign Challenges	L 2	C 0 3				
40		Architecturaldesign Challenges(cont.)	L 3	C 0 3				
41		RevisionClass 4						
42		StorageAsaService	L 3	C 0 3				
43		Advantage of Cloud Storage and its Providers	L 3	C 0 3				
44		Tutorial7						
45		InterCloudResource Management	L 4	C 0 4				
46		ResourceProviding&its Methods	L 4	C 0 4				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

47		ResourceProviding&its Methods (cont.)	L 4	C 0 4					
48		Globalexchangeof CloudResources	L 4	C 0 4					
49		Tutorial 8							
50		Globalexchangeof CloudResources (cont.)	L 4	C 0 4					
51		CloudSecurity Overview&Challenges	L 4	C 0 4					
52	IV	Software as a security Services&Security governance	L 4	C 0 4					
53		Tutorial 9							
54		Virtual Machine Security	L 4	C 0 4					
55		IAMSecurity Standards	L 4	C 0 4					
56		Hadoop,MapReduce, Virtual Box		C 0 5					
57		GoogleAppEngine&P rogramming Environment		C 0 5					
58	V	OpenStack,Cloud Federation		C 0 5					
59		Four Level of Federation, Application &FutureofFederation		C 0 5					
60		Tutorial Class10							



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(DS)

ACADEMIC YEAR 2025-26 (ODD Semester)

*Revised Bloom's Taxonomy (RBT) Levels:

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

References:

Text books :(As per University / Board syllabus)

T1. RajkumarBuyya,ChristianVecchiola,S.ThamaraiSelvi,—MasteringCloudComputing,Tata Mcgraw Hill,2013.

T2.AshishBhatnagar& Shailza Sharma ,"Cloud Computing",Katson Publication

Faculty Sign

HOD's Sign



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN DETAILS

Semester: V	Section: A	Course Code: BNC 502	Contact Hours /week: 1
Course Name: Essence of Indian Traditional Knowledge			# of credits: -
Faculty name: Dr. Rakesh Kumar Tiwari			Designation: Assistant Professor
Sessional Marks: 50		End Semester Examination Marks:100	University Exam Hours: 3

Prerequisites if any: -

Content delivery methods:

By Face to face delivery, Presentation and e-content

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Module 1- Society State and Polity in India State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient India, Kingship , Council of Ministers Administration Political Ideals in Ancient India Conditions' of the Welfare of Societies, The Seven Limbs of the State, Society in Ancient India, Purusārtha, Varnāshrama System, Āshrama or the Stages of Life, Marriage, Understanding Gender as a social category, The representation of Women in Historical traditions, Challenges faced by Women. Four-class Classification, Slavery.	4	CO1
2	Module 2- Indian Literature, Culture Tradition, and Practices Evolution of script and languages in India: Harappan Script and Brahmi Script. The Vedas, the Upanishads, the Ramayana and the Mahabharata, Puranas, Buddhist And Jain Literature in Pali,Prakrit And Sanskrit, Kautilya's Arthashastra, Famous Sanskrit Authors, Telugu Literature, Kannada Literature,Malayalam Literature ,Sangama Literature Northern Indian Languages & Literature, Persian And Urdu ,Hindi Literature	4	CO2



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

3	Module 3- Indian Religion, Philosophy, and Practices Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy, Shankaracharya, Various Philosophical Doctrines , Other Heterodox Sects, Bhakti Movement, Sufi movement, Socio religious reform movement of 19th century, Modern religious practices.	4	C03
4	Module 4-Science, Management and Indian Knowledge System Astronomy in India, Chemistry in India, Mathematics in India, Physics in India, Agriculture in India, Medicine in India ,Metallurgy in India, Geography, Biology, Harappan Technologies, Water Management in India, Textile Technology in India ,Writing Technology in India Pyrotechnics in India Trade in Ancient India/,India's Dominance up to Pre-colonial Times	4	C04
5	Module 5- Cultural Heritage and Performing Arts Indian Architect, Engineering and Architecture in Ancient India, Sculptures, Seals, coins, Pottery, Puppetry, Dance, Music, Theatre, drama, Painting, Martial Arts Traditions, Fairs and Festivals, Current developments in Arts and Cultural, Indian's Cultural Contribution to the World. Indian Cinema	3	C05

COURSE OUTCOMES: At the end of the Course, the Student will be able to:

C01	Explain society, state and polity in India in traditional and modern context.
C02	Describe essence of Indian Literature, Culture, Tradition and Practices.
C03	Visualize and explain the root of Indian Religion, Philosophy and Practices.
C04	Describe Science, Management and Indian Knowledge System.
C05	Explain Cultural Heritage of India and root of Performing Arts.



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

Mapping of CO v/s PO:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C01						2	1	2	-	-	-	2
C02						2	1	2	-	-	-	2
C03						2	1	1	-	-	-	2
C04						2	2	1	-	-	-	2
C05						2	1	1	-	-	-	2
Average						2.00	1.00	2.0	-	-	-	2.00

Mapping of CO v/s PSO:

	PSO1	PSO2	PSO3
C01	-	-	1
C02	-	-	1
C03	-	-	1
C04	-	-	1
C05	-	-	1
Average	-	-	1.00

Correlation levels: 1-Slight (Low) 2-Moderate (Medium) 3-Substantial (High)

Topics to be covered beyond syllabus

-

LESSON PLAN



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

Lecture	Module	Scheduled			Conducted			
		Topic	*RBT Levels	CO Mapping	Date	Topic	Date	No. Of Students
1	I	State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient India, Kingship , Council of Ministers Administration	L2	CO1				
2		Political Ideals in Ancient India Conditions' of the Welfare of Societies, The Seven Limbs of the State	L2	CO1				
3		Society in Ancient India, Purusārtha, Varnāshrama System, Āshrama or the Stages of Life	L2	CO1				
4		Marriage, Understanding Gender as a social category, The representation of Women in Historical traditions, Challenges faced by Women. Four-class Classification, Slavery.	L2	CO1				
5		State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient	L2	CO1				



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

		India, Kingship , Council of Ministers Administration							
6		Evolution of script and languages in India: Harappan Script and Brahmi Script. The Vedas, the Upanishads, the Ramayana and the Mahabharata, Puranas							
7		Buddhist And Jain Literature in Pali,Prakrit And Sanskrit							
8	II	Kautilya's Arthashastra, Famous Sanskrit Authors							
9		Telugu Literature, Kannada Literature, Malayalam Literature ,Sangama Literature Northern Indian Languages & Literature, Persian And Urdu ,Hindi Literature							
10	III	Pre-Vedic and Vedic Religion, Buddhism, Jainism	L2	C03					
11		Six System Indian Philosophy Shankaracharya	L2	C03					
12		Various Philosophical Doctrines , Other Heterodox Sects, Bhakti Movement, Sufi	L2	C03					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME
ACADEMIC YEAR 2025-26 (ODD Semester)

		movement							
13		Socio religious reform movement of 19th century	L2	C03					
14		Modern religious practices.	L2	C03					
15	I V	Astronomy in India, Chemistry in India, Mathematics in India, Physics in India, Agriculture in India .	L2	C04					
16		Medicine in India, Metallurgy in India, Geography, Biology.	L2	C04					
17		Harappan Technologies, Water Management in India, Textile Technology in India	L2	C04					
18		Writing Technology in India Pyrotechnics in India Trade in Ancient India/, India's Dominance up to Pre-colonial Times.	L2	C04					
20		Indian Architect, Engineering and Architecture in Ancient India	L2	C05					
21	V	Sculptures, Seals, coins, Pottery, Puppetry, Dance, Music, Theatre	L2	C05					
22		Drama, Painting, Martial Arts Traditions, Fairs and Festivals.	L2	C05					



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

23	Current developments in Arts and Cultural, Indian's Cultural Contribution to the World. Indian Cinema.	L2	CO5					
----	--	----	-----	--	--	--	--	--

Class Test	Syllabus
CT-01	Class 1-Class 05
CT-02	Class 6-Class 10
PRE-AKTU	Full Syllabus

*Revised Bloom's Taxonomy (RBT) Levels:

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

Text Books:

Text Books:

1. V. Sivaramakrishna (Ed.), Cultural Heritage of India-Course Material, Bharatiya Vidya Bhavan, Mumbai, 5th Edition, 2014
2. S. Baliyan, Indian Art and Culture, Oxford University Press, India
3. Swami Jitatmanand, Modern Physics and Vedant, Bharatiya Vidya Bhavan



BUDDHA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE/IT/AIML/DS/ECE/CE/ME

ACADEMIC YEAR 2025-26 (ODD Semester)

Faculty Sign

HOD's Sign



SKILL DEVELOPMENT CELL

Lesson Plan(Jul - Dec 2025)

Course - PPC (English)

College - BIT

Department- DS

Class/Section- 3rd Yr

Faculty - Mr. Santosh Kr. Tripathi

Lecture#	Scheduled Topics	Conducted			
		Date	No Of Students	Faculty Sign	Topic
1	Introduction: Need for Vocabulary				
2	Basic Grammar: Tense				
3	Basic Grammar: Tense				
4	Application of Modal Verbs				
5	Application of Modal Verbs				
6	Application of Pronoun				
7	Application of Pronoun				
8	Daily Usage Vocabulary				

9	Basic Reasoning				
10	Basic Reasoning				
11	Application of Articles				
12	Problems on Ages				
13	Problems on Ages				
14	Mock Test 1				
15	Raito & Proportion				
16	Ratio & Proportion				
17	Daily Usage Vocabulary				
18	Mock Test				

Faculty/ Trainer Sign:



SKILL DEVELOPMENT CELL

Lesson Plan

Course-TechEdge (MERN Stack)
 College- BIT
 Department-CSE/IT/CS/AIML/DS
 Class/Section-5th Semester
 Faculty- Mr. Rishabh Srivastava

Lecture#	Scheduled Topics	Conducted			
		Date	No Of Students	Faculty Sign	Topic
JavaScript Basic					
1	JavaScript Basics <ul style="list-style-type: none"> Overview of JavaScript and its importance in web development. Variables, Data Types, and Operators. Control Structures (if-else, switch-case) 				
2	<ul style="list-style-type: none"> Loops (for, while, do-while). Functions and Scope. 				
3	Advanced JavaScript Concepts <ul style="list-style-type: none"> Arrays and Objects. ES6+ Features: Let, Const, Arrow Functions, Template Literals. 				
4	<ul style="list-style-type: none"> Destructuring and Spread/Rest Operators. Promises, Async/Await. 				
5	DOM Manipulation and Event Handling <ul style="list-style-type: none"> Selecting and manipulating DOM elements. Event Listeners and Event Bubbling. Form validation. 				

Node JS

6	Introduction to Node.js <ul style="list-style-type: none"> • What is Node.js? Setting up Node.js. • Using npm and package.json. 				
7	<ul style="list-style-type: none"> • Creating your first Node.js application. • Understanding the Event Loop. 				
8	File System and Modules in Node.js (2 Hours) <ul style="list-style-type: none"> • Working with the File System module. • Importing and Exporting Modules. • Built-in and third-party modules. 				
9	Introduction to Express.js <ul style="list-style-type: none"> • Setting up an Express.js application. • Middleware and Routing. • Handling GET, POST, PUT, DELETE requests. 				
10	Advanced Express.js <ul style="list-style-type: none"> • Error handling in Express. • Using templating engines (e.g., EJS or Handlebars). • Serving static files. 				

MongoDB

11	Introduction to MongoDB <ul style="list-style-type: none"> • Understanding NoSQL databases. • Setting up MongoDB. • CRUD operations using MongoDB shell. • Data modeling basics. 				
12	MongoDB with Mongoose <ul style="list-style-type: none"> • Introduction to Mongoose. • Defining schemas and models. • Querying, Updating, and Deleting documents. • Validation and Middleware in Mongoose. 				
13	Building a REST API <ul style="list-style-type: none"> • Designing RESTful endpoints. • Connecting Express.js with MongoDB. • Implementing CRUD operations in a REST API. 				

React JS

14	Introduction to React.js <ul style="list-style-type: none"> • Overview of React and SPA (Single Page Applications). • Setting up a React app using Create React App. • Understanding JSX and Components. 				
15	React State and Props <ul style="list-style-type: none"> • Managing state with useState. • Passing data with props. • Component lifecycle and hooks. 				
16	React Forms and Events <ul style="list-style-type: none"> • Controlled vs Uncontrolled components. • Handling forms and events. • Lifting state up. 				
17	React Router <ul style="list-style-type: none"> • Setting up React Router. • Nested routes and route parameters. • Redirects and navigation. 				
18	React Context and State Management (2 Hours) <ul style="list-style-type: none"> • Using React Context API. • Introduction to third-party state management libraries (e.g., Redux or Zustand). 				

Faculty/ Trainer Sign: