Madhav Institute of Technology & Science, Gwalior

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science and Engineering

LECTURE PLAN

Subject: Database Management System (2150304)

Branch: CSE 3rd Semester

Session: July-Dec 2023

Teaching Session	Content to be covered	COs	Blooms Level (BM)	% Coverage (to be calculated based on the total syllabus)	MODE
1	**Introduction:** DBMS Concepts & Architecture	CO1/CO2	**LOTS**	**1.5%**	Offline / Black Board Teaching
2	File processing system, limitation of file processing system, Advantages of Database System	CO1/CO2	**LOTS**	**1.5%**	Offline / Black Board Teaching
2	Data independence, schema, Instances, Data dictionary	CO1/CO2	**LOTS**	**1.5%**	Learning through demonstration
3	Functions of DBA, Database languages	CO1/CO5	**LOTS**	**1.5%**	Learning through demonstration
4	Data Models: Hierarchical Data Model, Network Data Model & Relational Data Model	CO3/CO6	**LOTS**	**2%**	Learning through demonstration
5	E-R Model, Comparison between Models	CO3/CO6	**LOTS**	**2%**	Offline / Black Board Teaching
6	Introduction of File organization Techniques	CO3/CO6	**HOTS**	**3%**	Activity based Learning
7	**Relational Data Models:** Entities & Attributes, Entity types, Key Attributes	CO3/CO6	**HOTS**	**3%**	Learning through projects
8	Relationships, Domains, Tuples, types of Attributes	CO2/CO3	**HOTS**	**3%**	Learning through demonstration
9	Relations, Characteristics of Relations, Keys, Attributes of Relation	CO2/CO3	**HOTS**	**3%**	Learning through projects
10	Relational Database, Integrity Constraints	CO1/CO2	**LOTS**	**1.5%**	Offline / Black Board Teaching

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11	Relational Algebra: Concept	CO1/CO2	**HOTS**	**2.5%**	Offline / Black Board Teaching
12	Relational Algebra operations like Select, Project, Division, Union etc.	CO1/CO2	**HOTS**	**3%**	Activity based Learning
13	Join Operations	CO1/CO2	**HOTS**	**3%**	Offline / Black Board Teaching
14	Relational algebra extended operations	CO4/CO6	**HOTS**	**2.5%**	Offline / Black Board Teaching
15	**SQL:** Introduction of SQL, features of SQL	CO4	**HOTS**	**2%**	Learning through experimentation
16	Data Definition commands in SQL	CO4	**HOTS**	**4%**	Learning through experimentation
17	Data Manipulation commands in SQL	CO4	**LOTS**	**2%**	Learning through experimentation
18	SQL operators	CO4	**HOTS**	**4%**	Group based Learning
19	Update Statements	CO2/CO3	**HOTS**	**1.5%**	Offline / Black Board Teaching
20	Views in SQL	CO2/CO3	**HOTS**	**5.5%**	Learning through demonstration
21	Query & Sub query	CO2/CO3	**LOTS**	**3%**	Learning through demonstration
22	Extended SQL Queries	CO2/CO3	**HOTS**	**5%**	Group based Learning
23	Data Retrieval Queries	CO2/CO3	**HOTS**	**5%**	Learning through experimentation
24	Data Manipulation Statements examples	CO2/CO3	**HOTS**	**5%**	Learning through experimentation
25	Overview of Tuple Oriented Calculus	CO2/CO3	**HOTS**	**3%**	Learning through experimentation
26	Domain Oriented Relational Calculus	CO2/CO3	**LOTS**	**2%**	Learning through experimentation
27	**Normalization:** Introduction to Normalization	CO2/CO3	**LOTS**	**2%**	Offline / Black Board Teaching
28	Concepts of anomalies and its types	CO1/CO5	**LOTS**	**2.5%**	Offline / Black Board Teaching
29	Closure set of dependencies and of attributes	CO1/CO5	**LOTS**	**1.5%**	Offline / Black Board Teaching
30	Various Normal Forms: 1NF, 2NF	CO1/CO5	**HOTS**	**2%**	Offline / Black Board Teaching

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31	3NF, BCNF, Multivalued dependencies and fourth normal form	CO1/CO5	**LOTS**	**1.5%**	Offline / Black Board Teaching
32	**Transaction Processing & Concurrency Control:** Transaction Processing Concepts	CO1/CO5	**LOTS**	**2%**	Learning through demonstration
33	ACID properties, State Diagram	CO4/CO6	**LOTS**	**1.5%**	Offline / Black Board Teaching
34	Types of Transaction	CO4/CO6	**LOTS**	**2%**	Offline / Black Board Teaching
35	Basic idea of serializability	CO4/CO6	**LOTS**	**3%**	Activity based Learning
36	Basic idea of concurrency control	CO4/CO6	**LOTS**	**1.5%**	Offline / Black Board Teaching
37	Concurrent operation of Databases	CO4/CO6	**LOTS**	**1%**	Offline / Black Board Teaching
38	Recovery, Types of Recovery	CO4/CO6	**LOTS**	**1.5%**	Offline / Black Board Teaching
39	Basic overview of Distributed Databases System	CO4/CO6	**LOTS**	**1.5%**	Offline / Black Board Teaching
40	Concepts of Object-Oriented Database System and its tools.	CO4/CO6	**HOTS**	**2.5%**	Activity based Learning

Online	**Offline**						
	Black Board Teaching	**Group based Learning**	**Learning through projects**	**Learning through demonstration**	**Learning through experimentation**	**Activity based Learning**	**Onsite / field based learning**
-	**34.5%**	**09%**	**6%**	**16%**	**23%**	**11.5%**	**-**

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Lecture Plan

Subject: Design & Analysis of Algorithms (2150303)

Teaching Session	Content to be covered	COs	Blooms Level (BL)	% Coverage (to be calculated based on the total syllabus)	Mode of Teaching
1	RAM model, Algorithms, and its importance	CO-1	LOTS	2	Offline / Black Board Teaching
2	Recurrences and Asymptotic Notations,	CO-2	LOTS	3	Offline / Black Board Teaching
3	Mathematical Analysis of Non-Recursive and Recursive Algorithm,	CO-2	LOTS	4	Offline / Black Board Teaching
4	Review of Sorting & Searching Algorithms	CO-4	LOTS	3	Group based Learning
5	Basic Tree and Graph Concept	CO-3	HOTS	4	Learning through experimentation
6	Binary Search Trees,	CO-2	LOTS	2	Activity based Learning
7	Height Balanced Tree,	CO-3	HOTS	2	Offline / Black Board Teaching
8	B-Tree.	CO-5	HOTS	3	Learning through experimentation
9	Traversal Techniques and applications.	CO-1	LOTS	2	Offline / Black Board Teaching
10	Pre-order, In-order, and Post-order.	CO-4	LOTS	3	Learning through demonstration
11	Divide and Conquer Method: Introduction and Applications.	CO-3	LOTS	4	Learning through experimentation
12	Finding the maximum and minimum,	CO-3	LOTS	2	Offline / Black Board Teaching
13	Binary Search	CO-4,5	LOTS	2	Offline / Black Board Teaching
14	Merge Sort	CO-1	LOTS	2	Learning

					through demonstration
15	Quick Sort	CO-1	LOTS	3	Learning through demonstration
16	Strassen's Matrix Multiplication	CO-2	HOTS	3	Offline / Black Board Teaching
17	Greedy Method: Introduction, Characteristics	CO-3	LOTS	2	Offline / Black Board Teaching
18	Minimum Cost Spanning Trees	CO-3	HOTS	4	Offline / Black Board Teaching
19	Prim's and Kruskal's Algorithms,	CO-2	HOTS	2	Activity based Learning
20	knapsack Problem,	CO-1	LOTS	3	Offline / Black Board Teaching
21	Dijkstra's single source shortest path algorithm, Huffman Coding	CO-5	LOTS	4	Learning through experimentation
22	Dynamic Programming: Introduction,	CO-2	LOTS	2	Offline / Black Board Teaching
23	The principle of Optimality	CO-4	LOTS	2	Offline / Black Board Teaching
24	Examples of Dynamic Programming Methods: 0/1 Knapsack	CO-1	LOTS	4	Group based Learning
25	Traveling salesman problem,	CO-4	LOTS	3	Learning through experimentation
26	Floyds All Pairs Shortest Path,	CO-3	LOTS	3	Offline / Black Board Teaching
27	Longest Common Subsequence	CO-5	LOTS	3	Offline / Black Board Teaching
28	Reliability Design.	CO-3	LOTS	3	Learning through experimentation
29	Backtracking: Concept and its Examples	CO-1	HOTS	2	Offline / Black Board Teaching
30	4-Queen's Problem,	CO-6	LOTS	2	Offline / Black Board Teaching
31	Knapsack problem Hamiltonian Circuit Problem,	CO-2	LOTS	4	Learning through demonstration

32	Graph Coloring Problem	CO-6	LOTS	2	Offline / Black Board Teaching
33	Branch and Bound: Introduction and its Applications.	CO-2	HOTS	3	Offline / Black Board Teaching
34	Travelling Salesperson Problem	CO-6	LOTS	2	Learning through experimentation
35	NP Completeness: Introduction.	CO-5	LOTS	2	Offline / Black Board Teaching
36	Class P and NP, Polynomial Reduction,	CO-4	HOTS	4	Offline / Black Board Teaching

Black Board Teaching	**Group Based Learning**	**Learning Through Projects**	**Learning Through demonstration**	**Learning Through experimentation**	**Activity based learning**	**Onsite/field based learning**
54%	**7%**	**0%**	**12%**	**23%**	**4%**	**0%**

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

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Department of Computer Science and Engineering

Name of Course with Code: Project Planning & Financing (1000005)

Academic Lecture Plan for Session: July-Dec 2023

Unit	Day	Content to be Covered	COs	Blooms Level (BM)	Mode of Teaching	% Coverage (to be calculated based onthe total syllabus)
I	Tuesday	Project Planning: Introduction to Project Management	1	LOTS	**Blended**	4
	Friday	Difference between Project and Production	1,2	LOTS	**Blended**	4
	Tuesday	Attributes of a Project: Time, Cost, Quality and Safety.	1,2	HOTS	**Blended**	4
	Friday	Stakeholders of a Project, Project life cycle.	1,2	HOTS	**Blended**	4
	Tuesday	Project Planning: Types of Project Plans and feasibility.	1,2	LOTS	**learning through demonstration**	4
II	Friday	Project Planning: Project Network logic: Project	1,2,3	HOTS	**Blended**	3
	Tuesday	Activity duration and methods of estimating	1,2	HOTS	**Activity based learning**	3
	Friday	Activity duration – One time estimate three-time estimates, Duration estimation procedure.	1,2	LOTS	**Group based learning**	3
	Tuesday	Use of Bar Charts, Mile stone charts and networks Network representation schemes: Activity on Arrow and Activity on Node Networks (A-o-A & A-o-N)	1,2	HOTS	**learning through projects**	4
	Friday	Networking and work flows, Logic behind developing project network	1,2	HOTS	**learning through experiments**	4
	Tuesday	and simple network calculations, Critical paths and floats. Introduction to Project Management,	1, 5	HOTS	**Blended**	4
III	Friday	Use of network in Decision Making: Importance of critical path,	1, 5	LOTS	**Blended**	4
	Tuesday	Monitoring the progress and updating the project plan.	1, 5	LOTS	**Activity based learning**	4
	Friday	Use of floats in Resource smoothening, Introduction to Precedence Diagramming Method (PDM),	1, 2, 5	HOTS	**Group based learning**	4
	Tuesday	Different lag and lead relations in terms of SS (Start to Start), SF (Start to Finish),	1,2, 5	LOTS	**learning through projects**	4
	Friday	Finish to Start (FS), and Finish to Finish (FF) and composite relations	1, 5	HOTS	**learning through experiments**	4
IV	Tuesday	Project Cost Control: Breakeven analysis in planning stage.	1, 2, 5	HOTS	**learning through demonstration**	4

	Friday	Direct and indirect cost, slope of direct cost curve	1, 2, 5	HOTS	**Blended**	4
	Tuesday	Total project cost and optimum duration	1, 2, 5	HOTS.	**Activity based learning**	4
	Friday	Contracting the network for cost optimization	1, 2, 5	HOTS	**Group based learning**	4
	Tuesday	Escalation & Variation in prices	1, 5	HOTS	**Blended**	4
V	Friday	Introduction to project financing; Role of governments in financing projects	1, 3, 6	HOTS	**Blended**	3
	Tuesday	Funder and Concessionaire: Economic multiplier effects of Projects;	1,3, 6	HOTS	**learning through demonstration**	3
	Friday	Means of financing-public finance and private finance,	1, 3, 6	LOTS	**onsite/field learning**	3
	Tuesday	Granting authority: World Bank Group, IMF, ADB, Micro and Small Enterprises Funding Scheme (MSME),	1, 3, 6	HOTS	**Activity based learning**	3
	Friday	Elementary understanding of Procurement of infrastructure projects through Public Private Partnership (PPP) route,	1, 3, 6	LOTS	**Group based learning**	4
	Tuesday	Build Operate Transfer (BOT), Build Operate Own & Transfer (BOOT); Stakeholders' perspectives,	1,3, 6	LOTS	**Blended**	4

Online	**Offline**						
	Offline / Black Board Teaching	**Learning through demonstration**	**Learning through experimentation**	**Group based Learning**	**Activity basedLearning**	**Learning through projects**	**Onsite/Field**
3%	**35%**	**11%**	**11%**	**15%**	**14%**	**8%**	**3%**

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Department of Computer Science and Engineering

DATA SCIENCE (150511)

COURSE OBJECTIVES:

- To provide the fundamental knowledge of Data Sciences.
- To analyse the working of various techniques used in Data Sciences.
- To understand the basic representation and exploratory data analysis used in Data Sciences

LECTURE PLAN

Teaching Session	Content to be covered	COs	Blooms Level (BM)	% Coverage (to be calculated based on the total syllabus)	MODE
1	Introduction to Data Science - Introduction - Definition	CO1	**LOTS**	**2.50%**	Offline / Black Board Teaching
2	- Applications of Data Science - Impact of Data Science - Data Analytics Life Cycle - Role of Data Scientist	CO1	**LOTS**	**3.5%**	Offline / Black Board Teaching
3	Basics of Python - Essential Python libraries - Python Introduction: Features, Identifiers, Reserved words - Indentation, Comments	CO2	**LOTS**	**3.5%**	Offline / Black Board Teaching
4	- Built-in Data types and their Methods: - Strings - List - Tuples	CO2	**LOTS**	**3.0%**	Offline / Black Board Teaching
5	- Dictionary - Set - Type Conversion - Operators	CO2	**LOTS**	**3.50%**	Offline / Black Board Teaching
6	Decision Making - Looping-Loop Control statement - Math and Random number functions - User-defined functions, function arguments & its types	CO2	**LOTS**	**4.0%**	Activity based Learning

7	Quiz-1 and Discussion				
8	Vectorized Computation - The NumPy ndarray - Creating ndarrays	CO2/CO3	**LOTS**	**3.50%**	Activity based Learning
9	- Data Types for ndarrays - Arithmetic with NumPy Arrays	CO2/CO3	**HOTS**	**3.50%**	Learning through projects
10	- Basic Indexing and Slicing - Boolean Indexing	CO2/CO3	**HOTS**	**3%**	Activity based Learning
11	- Transposing Arrays - Universal Functions	CO2/CO3	**HOTS**	**3.5%**	Activity based Learning/ Board Teaching
12	- Fast Element Wise Array Functions - Mathematical and Statistical Methods	CO2/CO3	**HOTS**	**3.5%**	Learning through demonstration
13	- Sorting Unique and Other Set Logic	CO2/CO3	**LOTS**	**3.00%**	Activity based Learning
14	Quiz-2 and Discussion				
15	Data Analysis - Series - DataFrame	CO4	**LOTS**	**2.50%**	Offline / Black Board Teaching
16	- Essential Functionality - Dropping Entries, Indexing, Selection, and Filtering	CO4	**HOTS**	**3.5%**	Offline / Black Board Teaching
17	- Function Application and Mapping	CO4	**HOTS**	**3.0%**	Group based Learning
18	- Sorting and Ranking	CO4	**HOTS**	**1.5%**	Learning through experimentation
19	- Summarizing and Computing Descriptive Statistics	CO4	**HOTS**	**3.5%**	Learning through experimentation
20	- Mean, Standard Deviation, Skewness and Kurtosis - Unique Values, Value Counts, and Membership	CO4	**HOTS**	**4%**	Offline / Black Board Teaching
21	- Reading and Writing Data in Text Format	CO4	**HOTS**	**2%**	Offline / Black Board Teaching
22	Quiz-3 and Discussion				
23	Inferential Statistics in Data Science - Types of Learning	CO6	**HOTS**	**3%**	Learning through demonstration
24	- Linear Regression	CO6	**LOTS**	**3%**	Learning through demonstration

25	- Simple Linear Regression	CO6	**HOTS**	**3%**	Activity based Learning
26	- Implementation, plotting, and fitting regression line	CO6	**HOTS**	**3%**	Group based Learning
	- Multiple Linear Regression - Introduction, implementation, comparison with simple linear	CO6	**HOTS**	**2%**	Group based Learning
27	regression, Correlation Matrix, F-Statistic, - Identification of significant features	CO6	**HOTS**	**3%**	Learning through experimentation
28	- Polynomial Regression	CO6	**LOTS**	**3.0%**	Learning through experimentation
29	Quiz-4 and Discussion				
30	Exploratory Data Analysis and Visualization - Handling Missing Data - Data Transformation: Removing Duplicates	CO5/CO6	**LOTS**	**3.5%**	Learning through experimentation
31	- Transforming Data Using a Function or Mapping	CO5/CO6	**HOTS**	**3.5%**	Offline / Black Board Teaching
32	- Replacing Values - Detecting and Filtering Outliers	CO5/CO6	**HOTS**	**3.5%**	Offline / Black Board Teaching
33	- Functions in pandas	CO5/CO6	**HOTS**	**3.5%**	Activity based Learning
34	- Plotting with pandas: Line Plots - Bar Plots	CO5/CO6	**HOTS**	**3%**	Learning through demonstration
35	- Histograms and Density Plots - Scatter or Point Plots	CO5/CO6	**HOTS**	**3%**	Learning through demonstration
36	Quiz-5 and Discussion				

Online	**Offline**						
	Black Board Teaching	**Group based Learning**	**Learning through projects**	**Learning through demonstration**	**Learning through experimentation**	**Learning through experimentation**	**Onsite / field based learning**
-	**35%**	**8.0%**	**3.5%**	**12.5%**	**14.5%**	**26.5%**	**-**

COURSE OUTCOMES: After completing the course, the student will be able to:

CO1: Define basic concepts of Data Sciences.

CO2: Illustrate various concepts of python that are used in data sciences.

CO3: Identify various methods for the representation and manipulation of vectors.

CO4: Analysis the data for applying various statistical modelling approaches.

CO5: Identify hidden patterns in data and transform it using data science techniques.

CO6: Apply regression techniques to solve real world problems.

Syllabus

Unit – I: Introduction to Data Science: Introduction, Definition, applications of Data Science, Impact of Data Science, Data Analytics Life Cycle, role of Data Scientist. Basics of Python: Essential Python libraries, Python Introduction- Features, Identifiers, Reserved words, Indentation, Comments, Built-in Data types and their Methods: Strings, List, Tuples, Dictionary, Set, Type Conversion- Operators. Decision Making: Looping-Loop Control statement, Math and Random number functions. User defined functions, function arguments & its types.

Unit – II: Vectorized Computation: The NumPy ndarray- Creating ndarrays- Data Types for ndarrays- Arithmetic with NumPy Arrays- Basic Indexing and Slicing, Boolean Indexing, Transposing Arrays. Universal Functions: Fast Element, Wise Array Functions, Mathematical and Statistical Methods – Sorting Unique and Other Set Logic.

Unit – III: Data Analysis: Series, DataFrame, Essential Functionality: Dropping Entries, Indexing, Selection, and Filtering- Function Application and Mapping- Sorting and Ranking. Summarizing and Computing Descriptive Statistics – Mean, Standard Deviation, Skewness and Kurtosis. Unique Values, Value Counts, and Membership. Reading and Writing Data in Text Format.

Unit – IV: Inferential Statistics in Data Science: Types of Learning, Linear Regression- Simple Linear Regression, Implementation, plotting and fitting regression line. Multiple Linear Regression, Introduction, implementation, comparison with simple linear regression, Correlation Matrix, F-Statistic, Identification of significant features. Polynomial regression.

Unit – V: Exploratory Data Analysis and Visualisation: Handling Missing Data, Data Transformation: Removing Duplicates, Transforming Data Using a Function or Mapping, Replacing Values, Detecting and Filtering Outliers, Functions in pandas. Plotting with pandas: Line Plots, Bar Plots, Histograms and Density Plots, Scatter or Point Plots

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Department of Computer Science & Engineering

INFORMATION SECURITY

150513

Course Name & Code: Information Security (150513) Class: B.Tech 3rd Year Session: July-Dec 2022					
Teaching Session	**Date**	**Content to be covered**	**COs**	**Bloom Level(BM)**	**% Coverage(To be calculated based on the total syllabus)**
1.	Monday	Security, Principles and Attacks	CO1	L1	2.5
2.	Tuesday	Basic Number Theory	CO2	L1,L2	2.5
3.	Wednesday	Fundamental of Cryptography, steganography	CO3	L1	2.5
4.	Thursday	Crypt analysis, Code Breaking	CO1,CO3	L1,L2	2.5
5.	Monday	Block Ciphers, Stream Cipher	CO3	L2	2.5
6.	Tuesday	Substitution ciphers	CO3	L2	2.5
7.	Wednesday	Transposition ciphers	CO1,CO3	L2	2.5
8.	Thursday	Caesar Cipher	CO1	L1	2.5
9.	Monday	Play fair cipher & hill cipher	CO1	L1	2.5
10.	Tuesday	Cryptography , Symmetric Key Cryptography	CO1	L1,L3	2.5
11.	Wednesday	Public Key cryptography	CO1, CO3	L3	2.5
12.	Thursday	Principle of public key cryptography	CO3	L3	2.5
13.	Monday	Classical cryptographic	CO3	L1, L3	2.5

		algorithms			
14.	Tuesday	RC4, RSA	CO3	L3	2.5
15.	Wednesday	Distribution of public key & key management	CO3	L3	2.5
16.	Thursday	Diffie-Hellman Key exchange algorithm	CO5	L2,L3	2.5
17.	Monday	HASH Function , One way hash function	CO5	L3	2.5
18.	Tuesday	SHA	CO5	L3,L5	2.5
19.	Wednesday	Authentication requirements & functions	CO5	L3,L5	2.5
20.	Thursday	KERBEROS	CO5	L5	2.5
21.	Monday	MESSAGE AUTHENTICATION CODE	CO5	L1,L2	2.5
22.	Tuesday	SET (Secure Electronic Transaction)	CO5	L1,L2	2.5
23.	Wednesday	DIGITAL SIGNATURE & CERTIFICATES	CO5	L1,L2	2.5
24.	Thursday	IP & WEB SECURITY	CO5	L1,L2	2.5
25.	Monday	SSL,TLS	CO5	L4	2.5
26.	Tuesday	SET	CO5	L2,L3	2.5
27.	Wednesday	IDS	CO5	L3	2.5
28.	Thursday	FIREWALLS TYPES & FUNCTIONALITIES	CO4	L3	2.5
29.	Monday	PHISING ATTACKS & ITS TYPES	CO4	L4	2.5
30.	Tuesday	BUFFER OVERFLOW ATACK	CO4	L4	2.5
31.	Wednesday	Session Hijacking	CO4	L5	2.5
32.	Thursday	HACKING & TYPES OF HACKERS	CO4	L6	2.5
33.	Thursday	Hacker:Hacking and Types of Hackers	CO6	L5	2.5
34.	Monday	Foot printing, Scanning (Types: Port, Network,	CO6	L6	2.5

		Vulnerability),			
35.	Tuesday	Sniffing in Shared and Switched Networks	CO6	L6	2.5
36.	Wednesday	Sniffing Detection & Prevention	CO6	L6	2.5
37.	Thursday	Spoofing	CO6	L6	2.5

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Department of CSE

Disaster Management 100007

Semester: V

LECTURE PLAN

Name of Course (Code): Disaster Management (100007) Class: B.Tech.VthSem Session: Jul-Dec 2023					
Teaching Session	**Content to be covered**	**COs**	**Blooms Level (BM)**	**% Coverage (to be calculated based on the total syllabus)**	**MODE**
1	Introduction to disaster management, concepts and definition	1	LOT	**4**	Offline / Black Board Teaching
2	Disaster, vulnerability, risk severity, frequency and details	1	LOT	**4**	Offline / Black Board Teaching
3	Capacity impact, prevention, mitigation	1	LOT	**4**	Offline / Black Board Teaching
4	Disasters classification, demographic aspects (gender, age, special needs)	2	HOT	**4**	Offline / Black Board Teaching
5	Hazard locations, global and national disaster trends	2	LOT	**3**	Offline / Black Board Teaching
6	Hazard and vulnerability profile of India	2	LOT	**3**	Offline / Black Board Teaching
7	Disaster impact (environmental, physical, social, ecological, economic, potential, etc)	3	HOT	**4**	Group Based Learning
8	Disaster impact (environmental, physical, social, ecological, economic, potential, etc)	3	LOT	**4**	Offline / Black Board Teaching
9	Health, psycho-social issues	3	LOT	**3**	Offline / Black

					Board Teaching
10	Impact of natural disasters (floods, draught, cyclones, volcanoes, earthquakes, tsunami, landslides, etc)	3	LOT	**4**	Group Based Learning
11	Impact of natural disasters (floods, draught, cyclones, volcanoes, earthquakes, tsunami, landslides, etc)	3	LOT	**4**	Offline / Black Board Teaching
12	Impact of manmade disasters (industrial pollution, artificial flooding in urban areas, urban disasters, transportation accidents, etc)	3	HOT	**3**	Group Based Learning
13	Impact of manmade disasters (industrial pollution, artificial flooding in urban areas, urban disasters, transportation accidents, etc)	3	HOT	**4**	Offline / Black Board Teaching
14	Disaster management cycle: its phases	4	HOT	**4**	Offline / Black Board Teaching
15	Prevention, mitigation, preparedness, relief and recovery	4	HOT	**4**	Offline / Black Board Teaching
16	Structural and non-structural measures	4	HOT	**4**	Offline / Black Board Teaching
17	Risk analysis, vulnerability and capacity assessment	4	LOT	**4**	Offline / Black Board Teaching
18	Early warning systems	4	LOT	**3**	Offline / Black Board Teaching
19	Post disaster environmental response	4	HOT	**3**	Offline / Black Board Teaching
20	Roles and responsibilities of government, community, local	4	LOT	**4**	Offline / Black

	institutions, NGOs and other stakeholders				Board Teaching
21	Policies and legislation for disaster management	4	LOT	**4**	Offline / Black Board Teaching
22	DDR programmes in India	4	LOT	**3**	Offline / Black Board Teaching
23	Activities of National Disaster Management Authority	4	LOT	**4**	Offline / Black Board Teaching
24	Factors affecting vulnerability such as impact of development projects	5	HOT	**4**	Offline / Black Board Teaching
25	Environmental modifications (including of dams, land use changes, urbanization, etc)	5	HOT	**4**	Group Based Learning
26	Sustainable and environmental friendly recovery	5	HOT	**4**	Offline / Black Board Teaching
27	Reconstruction and development methods	5	HOT	**3**	Offline / Black Board Teaching

Black Board Teaching	**Group Based Learning**	**Learning Through Projects**	**Learning Through demonstration**	**Learning Through experimentation**	**Activity based learning**	**Onsite/field based learning**
85%	**15%**					

Kratika Sharma

(Assistant Professor)

MADHAVINSTITUTE OFTECHNOLOGYANDSCIENCE, GWALIOR– 474005
(A Govt. Aided UGC Autonomous Institute Affiliated to R.G.P.V. Bhopal, M.P.)

Department of CSE
Computer Science and Engineering
Modes of Teaching
Subject: Distributed System (150716)
Session: Session: June2023-Dec 2023

UNITs		CONTENTs	COs	Bloom's Level	% Coverage (to be calculated based on total syllabus)	MODEs
	I					
Unit I - Introduction to Distributed Systems**:**	1	Architecture for Distributed System	1, 2	LOTS	2.5	Offline / Black Board Teaching
	2	Goals of Distributed System	1, 2	LOTS	2.5	Offline / Black Board Teaching
	3	Hardware and Software Concepts	1, 2	LOTS	2.5	Offline / Black Board Teaching
	4	Distributed Computing Model	1, 2	LOTS	3.5	Offline / Black Board Teaching
	5	Advantages & Disadvantage Distributed System,	1, 2	HOTS	3.5	Activity based Learning
	6	Issues in Designing Distributed System.		HOTS	3.5	Activity based Learning
Unit II – Distributed Share Memory, Distributed File System::	7	Basic Concept of Distributed Share Memory (DSM),	3,4	HOTS	2.5	Offline / Black Board Teaching
	8	DSM Architecture & Its Types	3,4	HOTS	2.5	Offline / Black Board Teaching
	9	Virtual machine basics, types of virtual machines,	3,4	LOTS	2.5	Activity based Learning
	10	Design & Implementations Issues in DSM System, Structure of Share Memory Space, Consistency Model and Thrashing	3,4	HOTS	2	Offline / Black Board Teaching
	11	Desirable Features of Good Distributed File System, File Model	3,4	LOTS	2.5	Offline / Black Board Teaching
	12	File Service Architecture, File Accessing Model	3,4	HOTS	2.5	Activity based Learning
	13	File Sharing Semantics, File Catching Scheme,.	3,4	HOTS	3.5	Activity based Learning
	14	File Application & Fault Tolerance	3,4	LOTS	2	Offline / Black Board Teaching
Unit III – Inter Process Communication and Synchronization:	15	Data Representation & Marshaling, Group Communication,	4	HOTS	3.5	Offline / Black Board Teaching
	16	Client Server Communication,	3,4	HOTS	3.5	Offline / Black Board Teaching
	17	RPC- Implementing RPC Mechanism, Stub Generation, RPC Messages.	3,4	HOTS	3.5	Learning through projects
	18	Stub Generation, RPC Messages.	3,4	LOTS	2.5	Offline / Black Board

						Teaching
	19	Synchronization: - Clock Synchronization,	3,4	HOTS	3.5	Offline / Black Board Teaching
	20	Mutual Exclusion,	3,4	HOTS	3.5	Offline / Black Board Teaching
	21	Election Algorithms - Bully & Ring Algorithms.	3,4	HOTS	3.5	Learning through projects
	22	Election Algorithms - Bully & Ring Algorithms.	3,4	HOTS	3.5	Learning through projects
Unit IV – Distributed Scheduling and Deadlock:	23	Distributed Scheduling- Issues in Load Distributing,	1,3,4,5	LOTS	2	Offline / Black Board Teaching
	24	Components for Load Distributing Algorithms, Different Types of Load	1,3,4,5	HOTS	2.5	Offline / Black Board Teaching
	25	Distributing Algorithms, Task Migration and its issues	1,3,4,5	HOTS	3.5	Learning through demonstration
	26	Deadlock- Issues in deadlock detection & Resolutions,	1,3,4,5	HOTS	3.5	Learning through demonstration
	27	Deadlock Handling Strategy,	1,3,4,5	HOTS	3.5	Offline / Black Board Teaching
	28	Distributed Deadlock Algorithms.	1,3,4,5	HOTS	3.5	Offline / Black Board Teaching
Unit V – Distributed Databases and Multimedia Management Systems:	29	Distributed Data Base Management System (DDBMS),	1,6	LOTS	2	Offline / Black Board Teaching
	30	Types of Distributed Database, and Distributed Multimedia:	1,6	HOTS	2	Offline / Black Board Teaching
	31	Characteristics of multimedia	1,6	HOTS	2.5	Learning through projects
	32	Data, Quality of Service Managements.	1,6	HOTS	3	Activity based Learning
	33	Case Study of Distributed System: - Amoeba	1,6	HOTS	2	Learning through experimentation
	34	Case Study of Distributed System: , Mach, Chorus	1,6	LOTS	2.5	Learning through projects
	35	Case Study of Distributed System: Chorus	1,6	LOTS	2.5	Learning through projects

Online	Offline						
	Black Board Teaching	Group based Learning	Learning through projects	Learning through demonstration	Learning through experimentation	Activity based Learning	Onsite / field based learning
-	54.5	-	18	7	2	18.5	-

Prof Smita Parte
Assistant Professor
Department of CSE

Madhav Institute of Technology & Science, Gwalior

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science And Engineering
680312 Management Support Systems
LECTURE PLAN

Teaching Session	Date / Day	Content to be covered	Cos	Blooms Level (BM)	% Coverage (to be calculated based on the total syllabus)
1.	**Tuesday**	**Organizations, Management and the Networked Enterprise** – Information Systems in Global Business Today, Emerging digital firm	**CO1**	**LOTS**	**1.5%**
2.	**Wednesday**	**Organizations, Management and the Networked Enterprise** –Strategy, perspectives and dimensions of Information systems,	**CO5**	**LOTS**	**1.5%**
3	**Thursday**	Network based strategies	**CO2/CO5**	**LOTS**	**1.5%**
4	**Tuesday**	**Global E-business and Collaboration** – Business processes	**CO1**	**LOTS**	**2%**
5	**Wednesday**	**Global E-business and Collaboration** – Systems for different management groups and Enterprise	**CO1**	**LOTS**	**2%**
6	**Thursday**	**Global E-business and Collaboration** – E-Business, E-commerce, E-Government	**CO1/CO2**	**LOTS**	**3%**
7	**Tuesday**	**Global E-business and Collaboration** – Tools and technologies for Collaboration and Social Business	**CO4/ CO5**	**HOTS**	**3%**
8	**Wednesday**	**Global E-business and Collaboration** – Porter's competitive forces model, The Business value chain Model	**CO4/ CO5**	**LOTS**	**3%**
9	**Thursday**	**Ethical and Social issues in information systems** – A model for Thinking about Ethical, Social, Political issues	**CO1**	**LOTS**	**3%**
10	**Tuesday**	**Ethical and Social issues in information systems** – Five moral dimensions of the Information Age	**CO1/ CO5**	**LOTS**	**1.5%**
11	**Wednesday**	**Ethical and Social issues in information systems** – Ethical analysis, Candidate Ethical Principles	**CO1**	**LOTS**	**2.5%**
12	**Thursday**	**IT Infrastructure & Emerging Technologies** – Evolution, Components, management issues	**CO1**	**LOTS**	**3%**
13	**Tuesday**	**IT Infrastructure & Emerging Technologies** – Contemporary hardware platform trends	**CO5/CO6**	**LOTS**	**3%**
14	**Wednesday**	**IT Infrastructure & Emerging Technologies** –Contemporary software platform trends	**CO5/CO6**	**LOTS**	**2.5%**
15	**Thursday**	**IT Infrastructure & Emerging Technologies** – Web services and service-oriented architecture	**CO5/CO6**	**LOTS**	**2%**
16	**Tuesday**	**Foundations of Business Intelligence** – File organization terms and concepts	**CO5/CO6**	**LOTS**	**4%**
17	**Wednesday**	**Foundations of Business Intelligence** – Capabilities of Database management Systems, Analytical tools	**CO5/CO6**	**LOTS**	**2%**

18	**Thursday**	**Foundations of Business Intelligence** – Databases design, managing data resources	**CO5/CO6**	**HOTS**	**4%**
19	**Tuesday**	**Telecommunications, Internet and Wireless Technology** – Networking and communication trends, signals	**CO1/CO2**	**HOTS**	**1.5%**
20	**Wednesday**	**Telecommunications, Internet and Wireless Technology** – Types of networks, internet services and communications tools	**CO2/CO4**	**HOTS**	**5.5%**
21	**Thursday**	**Telecommunications, Internet and Wireless Technology** – Wireless computer networks and internet access	**CO2/CO4**	**LOTS**	**3%**
22	**Tuesday**	**Securing Information Systems** – Malicious Software: Viruses, worms, Trojan horses, spyware, Hackers and computer crime	**CO2/CO3**	**LOTS**	**5%**
23	**Wednesday**	**Securing Information Systems** – Internal threats, Business value of security and control: Legal and Regulatory requirements for Electronic records management	**CO2/CO3**	**HOTS**	**5%**
24	**Thursday**	**Securing Information Systems** – Establishing a framework for security and control: Risk assessment, Security policy	**CO2/CO3**	**HOTS**	**5%**
25	**Tuesday**	**Securing Information Systems** – Technologies and tools for protecting information resources.	**CO2/CO4**	**HOTS**	**3%**
26	**Wednesday**	**Enterprise Information System -** Achieving Operational Excellence and Customer Intimacy: Enterprise system	**CO**	**LOTS**	**2%**
27	**Thursday**	**Enterprise Information System -** Applications, Business values of Enterprise systems, Supply chain management system: Supply chain, Global supply chain	**CO1/CO3**	**LOTS**	**2%**
28	**Tuesday**	**Enterprise Information System -** Customer relationship management: Operational and Analytical CRM, Business value of Customer relationship management systems	**CO3/CO4**	**LOTS**	**2.5%**
29	**Wednesday**	**Enterprise Information System -** Enterprise applications: New opportunities and challenges	**CO3/CO4**	**LOTS**	**1.5%**
30	**Thursday**	**Managing Knowledge** – Important dimensions of knowledge, types of knowledge management systems	**CO4**	**LOTS**	**2%**
31	**Tuesday**	**Managing Knowledge** – Requirements of knowledge work systems, expert systems.	**CO4**	**LOTS**	**1.5%**
32	**Wednesday**	**Enhancing Decision Making** – Business value of improved decision making, types of decisions, decision-making process	**CO3/**	**LOTS**	**2%**
33	**Thursday**	**Enhancing Decision Making** – Business intelligence, decision support for operational and middle management, decision support for senior management	**CO3/**	**LOTS**	**1.5%**
34	**Tuesday**	**Enhancing Decision Making** –Group decision support systems, modeling and designing systems: structured and object oriented methodologies	**CO3/CO4**	**LOTS**	**2%**

35	**Wednesday**	**Enhancing Decision Making** – Alternative systems building approaches, Application development for the digital firm.	**CO3/CO6**	**LOTS**	**3%**
36	**Thursday**	**Project management** – Runaway projects and system failure	**CO**	**HOTS**	**1.5%**
37	**Tuesday**	**Project management** – Project management objectives, importance of project management.	**CO**	**LOTS**	**1%**
38	**Wednesday**	**Project management** – Linking systems projects to the Business plan, Information system costs and benefits.	**CO**	**HOTS**	**1.5%**
39	**Thursday**	**Project management** – Dimensions of project risk, change management and the concept of implementation	**CO5/CO6**	**LOTS**	**1.5%**
40	**Tuesday**	**Project management** – Controlling risk factors, project management software tools.	**CO5/CO6**	**HOTS**	**2.5%**

Dr. Parul Saxena

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science and Engineering

Name of Course with Code: NETWORK SECURITY (900209)

Academic Lecture Plan for Session:- July-Dec 2023

Total Lecture=44

Teaching Session	Date/Day	Content to be Covered	COs	Blooms Level (BM)	Mode of Teaching	% Coverage (to be calculated based on the total syllabus)
1	Monday	Introduction to the Course	1	LOTS	Offline / Black Board Teaching	2
2	Wednesday	Fundamentals of Cryptography	1,2	LOTS	Offline / Black Board Teaching	2
3	Friday	Fundamentals of Steganography,cryptanalysis,	1,2	HOTS	Learning through demonstration	3
4	Monday	Code Breaking	1,2	HOTS	Offline / Black Board Teaching	2
5	Wednesday	**Security:** Principles and Attacks,	1,2	LOTS	Offline / Black Board Teaching	2
6	Friday	Block Ciphers and Steam Ciphers	1,2,3	HOTS	Offline / Black Board Teaching	2
7	Monday	Substitution Ciphers, Transposition Ciphers,	1,2	HOTS	Group based Learning	2
8	Wednesday	Caesar Cipher, Play-Fair Cipher, Hill Cipher	1,2	LOTS	Learning through demonstration	2
9	Friday	Cipher Modes of Operation	1,2	HOTS	Learning through demonstration	2
10	Monday	**Cryptography:** Symmetric Key Cryptography, Public Key Cryptography	1,2	HOTS	Learning through demonstration	2
11	Wednesday	Principles of Public Key Cryptosystem,	1, 5	HOTS	Activity based Learning	3
12	Friday	Classical Cryptographic Algorithms: DES,	1, 5	LOTS	Activity based Learning	3
13	Monday	RC4, Blowfish	1, 5	LOTS	Offline / Black Board Teaching	2
14	Wednesday	RSA	1, 2, 5	HOTS	Offline / Black Board Teaching	3
15	Friday	Distribution of Public Keys and Key Management,	1,2, 5	LOTS	Group based Learning	3
16	Monday	Diffie-Hellman Key Exchange	1, 5	HOTS	Learning through demonstration	2
17	Wednesday	Hash Functions, One Way Hash Function,	1, 2, 5	HOTS	Offline / Black Board Teaching	2
18	Friday	SHA (Secure Hash Algorithm).	1, 2, 5	HOTS	Activity based Learning	3

19	Monday	**Authentication:** Requirements, Functions,	1, 2, 5	HOTS.	Offline / Black Board Teaching	3
20	Wednesday	Kerberos	1, 2, 5	HOTS	Activity based Learning	3
21	Friday	Message Authentication Codes,	1, 5	HOTS	Offline / Black Board Teaching	3
22	Monday	Message Digest: MD5,	1, 3, 6	HOTS	Learning through demonstration	2
23	Wednesday	SSH (Secure Shell),	1,3, 6	HOTS	Learning through experimentation	3
24	Friday	Digital Signatures, Digital Certificates	1, 3, 6	LOTS	Learning through experimentation	3
25	Monday	**IP & Web Security Overview:**	1, 3, 6	HOTS	Offline / Black Board Teaching	3
26	Wednesday	SSL (Secure Socket Layer),	1, 3, 6	LOTS	Learning through experimentation	2
27	Friday	TLS (Transport Layer Security),	1,3, 6	LOTS	Offline / Black Board Teaching	3
28	Monday	SET (Secure Electronic Transaction).	1,3, 6	HOTS	Learning through demonstration	2
29	Wednesday	**IDS (Intrusion Detection System):**	1,4	LOTS	Learning through demonstration	3
30	Friday	Statistical Anomaly Detection	1,4	LOTS	Offline / Black Board Teaching	3
31	Monday	Rule-Based Intrusion Detection,	1,4	HOTS	Offline / Black Board Teaching	2
32	Wednesday	Penetration Testing,	1,4	LOTS	Learning through demonstration	2
33	Friday	Risk Management	2	LOTS	Offline / Black Board Teaching	2
34	Monday	**Firewalls:** Types, **Firewalls:** Functionality. **Firewalls:** Polices	2,1	LOTS	Learning through experimentation	2
35	Wednesday	**Phishing:** Attacks and Its Types,	2	HOTS	Offline / Black Board Teaching	2
36	Friday	Buffer Overflow Attack, Cross Site Scripting	2	HOTS	Offline / Black Board Teaching	2
37	Monday	SQL Injection Attacks,	2	HOTS	Learning through demonstration	1
38	Wednesday	Session Hijacking.	2	HOTS	Learning through experimentation	3
39	Friday	**Denial of Service Attacks:** Smurf Attack	1,2	HOTS	Learning through experimentation	2
40	Monday	SYN ,Flooding, Distributed Denial of Service.	1,2	HOTS	Offline / Black Board Teaching	2
41	Wednesday	**Hacker:** Hacking and Types of Hackers, Foot printing	1,4	LOTS	Offline / Black Board Teaching	2
42	Friday	Scanning: Types: Port, Network, Vulnerability	1,4	LOTS	Offline / Black Board Teaching	2
43	Monday	Sniffing in Shared and Switched Networks	2	HOTS	Offline / Black Board Teaching	2
44	Wednesday	Sniffing Detection & Prevention, Spoofing.	2	HOTS	Offline / Black Board Teaching	2

Online	Offline					
	Offline / Black Board Teaching	Learning through demonstration	Learning through experimentation	Group based Learning	Activity based Learning	Learning through projects
0	47%	21%	15%	5%	12%	0

Jitendra Kumar Tyagi

Assistant Professor

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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Department of CSE

Lecture Plan

DATA MINING & WAREHOUSING

150715

Session – July December 2023

Lecture No.	CONTENT	COs	Bloom's Level	% Coverage (to be calculated based on total syllabus)	MODE
1.	Data type for Data Mining: Relational Databases Data Ware-Houses	1	LOTS	3%	**Offline / Black Board Teaching**
2,3	Transactional Databases, Advanced Database System and Its Applications,	1	LOTS	3%	**Offline / Black Board Teaching**
4,5	Data Mining Functionalities Concept/Class Description	1	LOTS	3%	**Offline / Black Board Teaching**
6	Association Analysis Classification & Prediction	1	LOTS	2%	**Offline / Black Board Teaching**
7	Cluster Analysis	1, 6	LOTS	2%	**Offline / Black Board Teaching**
8,9	Outliner Analysis Classification of Data Mining Systems	1	LOTS	3%	**Offline / Black Board Teaching**
10	Major Issues in Data Mining	1	HOTS	3%	**Offline / Black Board Teaching**
11,12	Data Warehouse and OLTP Technology for Data Mining:	1	HOTS	3%	**Offline / Black Board Teaching**

	Differences between Operational Database Systems & Data Warehouse				
13	Multidimensional Data Model	1,2	LOTS, HOTS	3%	**Group Based Learning**
14,15	Data Warehouse Architecture	1, 2	LOTS	3%	**Offline / Black Board Teaching**
16,17	Data Warehouse Implementation	1, 2	HOTS	3%	**Offline / Black Board Teaching**
18,19	Data Cube Technology	1, 2	HOTS	2%	**Offline / Black Board Teaching**
20	Emerging Scenario of Pattern Warehousing System	1, 2	HOTS	3%	**Offline / Black Board Teaching**
21,22	Data Pre-processing: Data Cleaning	1, 4, 6	HOTS	3%	**Learning Through Projects**
23	Data Integration and Transformation	1, 2, 6	HOTS	2%	**Learning Through Projects**
24,25	Data Reduction Discretization and Concept Hierarchy Generation	1, 3, 6	HOTS	2%	**Learning Through experimentation**
26	Data Mining Primitives Languages and System Architectures	1, 3, 6	HOTS	3%	**Learning Through experimentation**
27	Concept Description	1, 5, 6	HOTS	3%	**Activity based learning**
28	Characterization and Comparison Analytical Characterization	1, 3, 6	HOTS	2%	**Offline / Black Board Teaching**
29,30	Mining Association Rules in Large Databases: Association Rule Mining Market	1, 3, 6	HOTS	3%	**Offline / Black Board Teaching**

	Basket Analysis				
31,32	Mining Single Dimensional Boolean Association Rules from Transactional Databases: The Apriori Algorithm	1, 3, 6	HOTS	5%	**Offline / Black Board Teaching**
33	Generating Association Rules from Frequent Items	1, 3, 6	HOTS	5%	**Offline / Black Board Teaching**
34	Improving the Efficiency of Aprior	1, 5	HOTS	3%	**Learning through demonstration**
35	Algorithms & their Comparison	1, 2, 5	HOTS	3%	**Offline / Black Board Teaching**
36	Mining Multilevel Association Rules	1, 2, 5	HOTS	3%	**Offline / Black Board Teaching**
37	Multidimensional Association Rules	1, 2, 5	HOTS	3%	**Offline / Black Board Teaching**
38	Constraint Based Association Rule Mining	1, 2, 5	HOTS	3%	**Offline / Black Board Teaching**
39,40	Classification & Predication and Cluster Analysis: Issues Regarding Classification & Predication	1, 5	LOTS	2%	**Offline / Black Board Teaching**
41	Different Classification Methods	5	LOTS	4%	**Offline / Black Board Teaching**
42	Predication	4, 6	HOTS	3%	**Offline / Black Board Teaching**
43	Cluster Analysis	4, 5, 6	HOTS	3%	**Learning Through experimentation**
44,45	Major Clustering Methods	5, 6	HOTS	3%	**Group Based Learning**
46	Currently Available	6	HOTS	3%	**Group Based**

	Tools				**Learning**
47,48	Case Study	6	HOTS	3%	**Group Based Learning**

Black Board Teaching	**Group Based Learning**	**Learning Through Projects**	**Learning Through demonstration**	**Learning Through experimentation**	**Activity based learning**	**Onsite/field based learning**
69%	**12%**	**5%**	**3%**	**8%**	**3%**	

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