

LESSON PLAN

Department: IT		Semester: 6 th	Name of Faculty: SMT. KUMARI JYOTI
Subject: Data Science & Analytics (DS&A)	No. of days/ week Class allotted: 4	Effective From Date: 22.12.2025	
		No. of Week- 15	
		Topic to be Covered:	
Week	Class Day	Theory	
1 st	1st	UNIT 1: INTRODUCTION TO DATA SCIENCE	
	2nd	1.1 Data Science	
	3rd	1.2 Related Terminology	
	4th	1.3 Methods of Data Repository	
2 nd	1st	1.4 Personnel involved in Data Science	
	2nd	1.5 Types of Data	
	3rd	1.6 Data Science Process	
	4th	1.7 Popular Data Science Toolkits	
3 rd	1st	1.8 Existing Applications	
	2nd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	3rd	UNIT 2: DATA MANGEMENT USING IBM SPSS	
	4th	2.1 Data Management Planning	
4 th	1st	2.2 Data management Plan	
	2nd	2.3 Data Collection and Management	
	3rd	2.4 Application Programming Interface	
	4th	2.5 Exploring Data and Building Models	
5 th	1st	2.6 Storage Management,	
	2nd	Importing Data	
	3rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	4th	UNIT 3: DATA ANALYSIS USING R PROGRAMMING LANGUAGE	
6 th	1st	3.1 Applied Statistical Techniques	
	2nd	3.2 Types of Statistical Data	
	3rd	3.3 Types of Big Data Analytics	
	4th	3.4 Collecting Data for Sampling and Distribution	
7 th	1st	3.5 Probability, Frequency Distribution	
	2nd	3.6 Population and Parameters	
	3rd	3.7 Central tendency and Central Value	
	4th	3.8 Measures of Central Tendency	
8 th	1st	3.9 Different types of Statistical Means	
	2nd	3.10 Estimation Problem	
	3rd	3.11 Normal Distribution Curve	

	4th	1. Doubt Clearing class 2. Quiz test 3. Assignment
9 th	1st	UNIT 4: DATA VISUALISATION
	2nd	4.1 Data Visualisation and its importance
	3rd	4.2 Data Visualization methods
	4th	4.3 Variables and Encoding
10 th	1st	1. Doubt Clearing class 2. Quiz test 3. Assignment
	2nd	UNIT 5: APPLICATIONS OF DATA SCIENCE, TECHNOLOGIES FOR VISUALISATION
	3rd	5.1 Applications of Data Science Technologies for visualisation
	4th	5.2 Python Programming
11 th	1st	5.3 Data Types, Operations
	2nd	5.4 Modules, Library
	3rd	5.5 Introduction to Bokeh
	4th	1. Doubt Clearing class 2. Quiz test 3. Assignment
12 th	1st	UNIT 6: RECENT TRENDS IN DATA SCIENCE
	2nd	6.1 Data collection and Analysis Techniques
	3rd	6.2 Big Data Visualisation Tools and Visualising
	4th	6.3 Preattentive Attributes
13 th	1st	6.4 Challenges of Big Data Visualisation
	2nd	6.5 Potential Solution
	3rd	6.6 Future Progress of Big Data Visualisation
	4th	1. Doubt Clearing class 2. Quiz test 3. Assignment
14 th	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
15 th	1st	Previous Year Question Discussions
	2nd	Previous Year Question Discussions
	3rd	Previous Year Question Discussions
	4th	Previous Year Question Discussions

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LESSON PLAN

Discipline: IT		Semester: 4 rd	Name of Faculty : Smt. Kumari Jyoti
Subject: Programming in C++	No. of days/ week Class allotted: 3	Effective From Date: 22.12.2025	
Week	Class Day	Theory	
1 st	1 st	UNIT 1: INTRODUCTION TO OBJECT ORIENTED PROGRAMMING	
	2 nd	Introduction to object-oriented approach	
	3 rd	Need of object-oriented programming	
2 nd	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	2 nd	UNIT 2: FEATURES OF OBJECT-ORIENTED LANGUAGE C++	
	3 rd	Common statement Basic data types	
3 rd	1 st	Operators Arithmetic, relational, logical operators	
	2 nd	Manipulators, assignment and conditional operators New and delete operators	
	3 rd	Control structure FOR loop	
4 th	1 st	WHILE loop If-else statement	
	2 nd	Switch statement Break and continue statement	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
5 th	1 st	UNIT 3: OBJECTS AND CLASSES	
	2 nd	Definition and declaration	
	3 rd	Access specifier: Private, Public and Protected	
6 th	1 st	Constructor and Destructor	
	2 nd	Classes and Instances of classes	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
7 th	1 st	UNIT 4: OPERATOR OVERLOADING	
	2 nd	Basic concepts of overloading	
	3 rd	Overloading unary operators	
8 th	1 st	Overloading binary operators	
	2 nd	Advantages of operator overloading	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
9 th	1 st	UNIT 5: INHERITANCE	
	2 nd	Definition of inheritance	
	3 rd	Basic concepts of "Base class", "derived class" and "Intermediate Base Class"	

10 th	1 st	Derived class constructor
	2 nd	Public and private inheritance
	3 rd	Types of inheritance: Single, Multiple & Multilevel inheritance
11 th	1 st	Hierarchical, and Hybrid inheritance
	2 nd	1. Doubt Clearing class 2. Quiz test 3. Assignment
	3 rd	UNIT 6: POLYMORPHISM
12 th	1 st	Introduction to Polymorphism in C++ programming languages
	2 nd	Types of polymorphism
	3 rd	Polymorphic variables
13 th	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment
	2 nd	UNIT 7: FUNCTION OVERLOADING VIRTUAL FUNCTIONS
	3 rd	Function overloading concepts
14 th	1 st	Function signature
	2 nd	Call for function with parameters
	3 rd	Definition of virtual function
15 th	1 st	Friend function and friend classes
	2 nd	Use of 'this' pointer
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment

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Discipline: IT		Semester: 4 rd	Name of Faculty : Smt. Kumari Jyoti
Subject: Operating System (OS)	No. of days/ week Class allotted: 3	Effective From Date: 22.12.2025	
Week	Class Day	Theory	
1 st	1 st	UNIT 1: OVERVIEW OF OPERATING SYSTEM:	
	2 nd	Basic concepts,	
	3 rd	UNIX/LINUX Architecture,	
2 nd	1 st	Kernel, services and systems calls,	
	2 nd	System programs.	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
3 rd	1 st	UNIT 2: PROCESS MANAGEMENT:	
	2 nd	Process concepts,	
	3 rd	Operations on processes,	
4 th	1 st	IPC,	
	2 nd	Process Scheduling,	
	3 rd	Multi-threaded programming	
5 th	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	2 nd	UNIT 4: MEMORY MANAGEMENT:	
	3 rd	Memory allocation, Swapping,	
6 th	1 st	Paging, Segmentation,	
	2 nd	Virtual Memory, Various faults.	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
7 th	1 st	UNIT 4: FILE MANAGEMENT:	
	2 nd	Concept of a file, Access methods,	
	3 rd	Directory structure, File system mounting,	
8 th	1 st	File sharing and protection, File system structure and implementation,	
	2 nd	Directory implementation, Free space management,	
	3 rd	Efficiency and performance. Different types of file systems	
9 th	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	2 nd	UNIT 5: I/O SYSTEM:	
	3 rd	Mass storage structure- overview,	

10 th	1 st	Disk structure,
	2 nd	Disk attachment,
	3 rd	Disk scheduling algorithms,
11 th	1 st	Swap space management,
	2 nd	RAID types–RAID 0, RAID –1, RAID 5.
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment
12 th	1 st	UNIT 6: DEAD LOCKS:
	2 nd	Concept of deadlock
	3 rd	Resources
13 th	1 st	Deadlock Prevention: Banker Algorithm & Safety Algorithm
	2 nd	The Ostrich Algorithm
	3 rd	Deadlock Detection and Recovery
14 th	1 st	Deadlock Prevention
	2 nd	1. Doubt Clearing class 2. Quiz test 3. Assignment
	3 rd	UNIT 7: OS SECURITY:
15 th	1 st	Authentication, Access Control,
	2 nd	Access Rights, System Logs
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment

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