BHAI GURDAS INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

LESSON PLAN

Subject Name: - Big Data **Subject Code: - BTIT** 601-18

Year: - **Semester: - 6th IT**

Lecture No.	**Unit**	**Date/ Week**	Topic	**Teaching Aids**	**Reference**
L-1	1	10 days	Introduction to Big Data: Types of Digital Data- Characteristics of Data	chalk, board-dustor chalk, board-dustor	Notes, text-book,
L-2			Evolution of Big Data - Definition of Big Data - Challenges with Big Data		
L-3			3Vs of Big Data - Non Definitional traits of Big Data - Business Intelligence vs. Big Data		
L-4			Data warehouse and Hadoop environment - Coexistence. Big Data Analytics: Classification of analytics		
L-5			Data Science - Terminologies in Big Data - CAP Theorem		

L-6			BASE Concept. NoSQL: Types of Databases ,Introduction to Hadoop: Features – Advantages –		
L-7			Versions - Overview of Hadoop Eco systems - Hadoop distributions - Hadoop vs. SQL		
L-8			– RDBMS vs. Hadoop - Hadoop Components – Architecture – HDFS		
L-9			Map Reduce: Mapper – Reducer – Combiner – Partitioner – Searching – Sorting – Compression		
L-10			Hadoop 2 (YARN): Architecture - Interacting with Hadoop Eco systems.		
L-11	Unit-2	8 days	No SQL databases: Mongo DB: Introduction		
L-12			– Features - Data types - Mongo DB Query language - CRUD operations		

L-13			– Arrays - Functions: Count – Sort – Limit – Skip – Aggregate - Map Reduce		
L-14			Cursors – Indexes - Mongo Import – Mongo Export		
L-15			Cassandra: Introduction – Features -		
L-16			Data types – CQLSH - Key spaces CRUD operations – Collections – Counter – TTL		
L-15			Cassandra: Introduction – Features - Data types –		
L-16			CQLSH - Key spaces CRUD operations – Collections –		
L-17			Counter – TTL Alter commands - Import and Export		
L-18			Querying System tables. Parameter substitution - Diagnostic operator.		
L-19	Unit-3		Hadoop Eco systems: Hive – Architecture - data type		
L-20			File format – HQL – SerDe - User defined functions – Pig: Features – Anatomy		
L-21			Pig on Hadoop - Pig Philosophy - Pig Latin overview - Data types Running pig -		
L-22			Execution modes of Pig HDFS commands , Relational operators		

L-23			Eval Functions, Complex data type, piggy bank, s		
L-24			User defined Function,Parameter substitution -		
L-25			Diagnostic operator		
L-26			Introduction - Connecting to Mongo DB - Connecting to Cassandra		
L-27	Unit-4		Analytical Approaches, Introducing to various Analytical Tools		
L-28			Installing R, Handling Basic Expressions in R, Variables in R		
L-29			working with Vectors, Storing and Calculating Values in R		
L-30			Creating and Using Objects, interacting with Users		
L-31			Handling Data in R Workspace, Executing Scripts		
L-32			Reading Datasets and Exporting Data from R,		
L-33			Manipulating and Processing Data in R		
L-34			working with Functions and Packages in R, Performing Graphical Analysis in R		
L-35			Techniques Used for Visual Data Representation		
L-36			Types of Data Visualization		