

Hour	Unit	Topic	Teaching Methodology	Remarks
1	I	Introduction to Big Data: Need & Evolution	Whiteboard	
2	I	Big Data Platform & Challenges of Conventional Systems	Whiteboard	
3	I	Intelligent Data Analysis & Nature of Data	Whiteboard	
4	I	Analytic Processes & Tools	Whiteboard	
5	I	Analysis vs Reporting – Differences and Use Cases	Whiteboard	
6	II	Introduction to Stream Processing & Stream Concepts	Whiteboard	
7	II	Stream Data Model and Architecture	Whiteboard	
8	II	Stream Computing & Real-time Analytics Platform (RTAP)	Whiteboard	
9	II	Sampling Data in a Stream & Filtering Streams	Whiteboard	
10	II	Counting Distinct Elements & Estimating Moments	Whiteboard	
11	II	Counting Oneness in a Window & Decaying Window Concepts	Whiteboard	
12	III	Introduction to Hadoop & History	Whiteboard	
13	III	Hadoop Distributed File System (HDFS): Design & Components	Whiteboard	
14	III	Analyzing Data with Hadoop & Scaling Out	Whiteboard	
15	III	Hadoop Streaming & Java Interfaces to HDFS	Whiteboard	
16	IV	Developing a MapReduce Application – Overview	Whiteboard	
17	IV	How MapReduce Works & Anatomy of Job Run	Whiteboard	
18	IV	Failures & Fault Tolerance in MapReduce	Whiteboard	
19	IV	Job Scheduling, Shuffle and Sort, Task Execution	Whiteboard	
20	IV	MapReduce Types, Formats & Features	Whiteboard	
21	IV	Working with Hadoop Environment	Whiteboard	
22	V	Frameworks: Introduction to Pig and Hive	Whiteboard	
23	V	Data Processing Operators in Pig	Whiteboard	
24	V	Hive Services & HiveQL	Whiteboard	
25	V	Querying Data in Hive & Examples	Whiteboard	

26	V	Fundamentals of HBase & ZooKeeper	Whiteboard	
27	VI	Introduction to Predictive Analytics	Whiteboard	
28	VI	Simple Linear Regression – Concepts & Applications	Whiteboard	
29	VI	Multiple Linear Regression & Interpretation of Coefficients	Whiteboard	
30	VI	Visualizations & Visual Data Analysis Techniques	Whiteboard	
31	VI	Interaction Techniques & Visual Analytics Systems	Whiteboard	
32	All	Practice Problems & Case Studies across Units	Whiteboard	
33	All	Discussion: Challenges & Real-world Applications	Whiteboard	
34	All	Recap and Revision of Units I–III	Whiteboard	
35	All	Recap and Revision of Units IV–VI	Whiteboard	
36	All	Final Q&A, Revision and Student Presentations	Whiteboard	