



**C. U. SHAH UNIVERSITY**  
**Wadhwan City**

**FACULTY OF:** - Technology and Engineering  
**DEPARTMENT OF:** - Computer Engineering  
**SEMESTER:** - VII  
**CODE:** - 4TE07BIB1  
**NAME:** – Business Intelligence and Big Data Analytics

**Teaching & Evaluation Scheme: -**

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
4TE07BIB1	Business Intelligence and Big Data Analytics	3	0	2	5	4	30	1.5	70	3.0	-	20	30	150

**Objectives:**

The objectives of the course are:

- Understanding concepts of map and reduce and functional programming.
- Gain conceptual understanding of Hadoop Distributed File System.
- Gain conceptual understanding of analytics concepts, algorithms and statistical tests.

**Prerequisites:**

- Basic knowledge of databases, Operating System & java Programming.

**Course outline:**

Sr. No.	Course Contents	Total Hrs.
1	<b>Introduction to Big Data:</b> Analytics ,Nuances of big data ,Value ,Issues ,Case for Big data , Big data options Team challenge Big data sources ,Acquisition ,Nuts and Bolts of Big data. Features of Big Data, Security, Compliance, auditing and protection, Evolution of Big data, Best Practices for Big data, Analytics, Big data characteristics, Volume, Veracity, Velocity, Variety, Data Appliance and Integration tools.	10
2	<b>Data Analysis:</b> Evolution of analytic scalability, Convergence, parallel processing systems, Cloud computing, grid computing , map reduce, analytic data sets, Analytic methods, analytic tools, Statistical significance, business approaches, Analytic innovation, Traditional approaches, Iterative.	10
3	<b>Introduction to Hadoop-MapReduce:</b> Hadoop Architectures, HDFS, How	08

	Does Hadoop Work, Advantages of Hadoop, Features of Hadoop, Mapreduce-Algorithm.	
<b>4</b>	<b>Predictive Analytics And Visualization:</b> Predictive Analytics, Supervised Unsupervised learning, Neural networks, Mining Frequent item sets, Market based model , Apriori Algorithm, Handling large data sets in Main memory, Counting frequent item sets in a stream, Clustering Techniques, Hierarchical , K-Means, Clustering high dimensional data Visualizations , Visual data analysis techniques, interaction techniques; Systems and application	<b>10</b>
<b>5</b>	<b>Frameworks And Applications:</b> IBM for Big Data, Hive, No SQL Databases,S3,Hadoop Distributed file systems, Hbase, Analyzing big data with twitter, Big data for E-Commerce ,Big data for blog.	<b>10</b>
	<b>Total</b>	<b>48</b>

### Learning Outcomes:

After completing this course, students will be able to:

- Use Hadoop, Map Reduce Framework.
- Identify the need for big data analytics for a domain.
- Apply big data analytics for a given problem.
- Contextually integrate and correlate large amounts of information automatically to gain faster insights.

### Books Recommended:

1. Big Data Big Analytics by **Michael Minelli**, John Wiley Publication 2013
2. Big Data Analytics: Turning Big Data into Big Money by **Frank J Ohlhorst**, Wiley and SAS Business Series, 2012.
3. Data Mining and Predictive Analysis: Intelligence Gathering and Crime Analysis by **Colleen Mccue**,Elsevier, 2007
4. Intelligent Data Analysis by **Michael Berthold, David J. Hand**, Springer, 2007.
5. Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data- **Paul Zikopoulos, Chris Eaton, Paul Zikopoulos**, McGraw Hill, 2011.
6. Data Mining Concepts and Techniques- **Jiawei Han, Micheline Kamber**, Second Edition, Elsevier, Reprinted 2008.