

# GUJARAT TECHNOLOGICAL UNIVERSITY

## (Integrated MCA)

### Year IV – (Semester-VIII) (W.E.F. December 2016)

**Subject Name: Big Data**

**Subject Code: 4480601**

#### 1. Learning Objectives:

- To understand concepts of Big Data
- To understand various Big Data Technologies
- To understand understanding of big data analysis

**2. Prerequisites :** Basic Knowledge of programming and Database Concepts

#### 3. Contents:

Unit	Course Content	Percentage	No. of Lectures
<b>I</b>	<b>Introduction to Big Data</b>  Types of Data, Data Analysis, Characteristic of Big Data, Drivers of Big Data  Big Data Analytics Analysis, Big Data BI	<b>20%</b>	<b>06</b>
<b>II</b>	<b>Big Data Storage Concepts</b>  Introduction to NoSQL,  NoSQL Variants, understanding the storage architecture, Performing CRUD Operations, Querying NoSQL Stores,, Modifying Data Stores	<b>30%</b>	<b>12</b>
<b>III</b>	<b>Big Data Processing Concepts</b>  Hadoop (HDFS,Hbase), Processing workloads, clusters,, Processing in batch Mode, Processing in Real-time mode	<b>25%</b>	<b>10</b>
<b>IV</b>	<b>Big Data Analysis Techniques</b>  Quantitative Analysis, Qualitative Analysis , Data Mining, Statistical Analysis (A/B Testing, Correlation, Regression), Machine Learning(Classification, Clustering, Outlier Detection, Filtering), Semantic Analysis, Visual Analysis	<b>25%</b>	<b>10</b>

#### 4. Text Book:

1. Thomas Erl,Wajid Khattak,and Paul Buhler: Big Data Fundamentals: Concepts, Drivers and techniques , Pearson

2. Shashank Tiwari, Professional NoSQL, WROX

**5. Reference Books:**

1. Chris Eaton,Dirk derooset al. , “Understanding Big data ”, McGraw Hill, 2012.
2. BIG Data and Analytics , Seema Acharya, Subhashini Chhellappan, Willey
3. MongoDB in Action, Kyle Banker,Piter Bakkum , Shaun Verch, Dream tech Press
4. Tom White, “HADOOP: The definitive Guide”, O Reilly 2012.
5. VigneshPrajapati, “Big Data Analyticswith R and Haoop”, Packet Publishing 2013
6. Big Data Black Book, DreamTech

**Web Resources**

- a. <http://www.bigdatauniversity.com>
- b. <http://www.mongodb.com>
- c. <http://hadoop.apache.org/>

**6. Chapter wise Coverage from Text Book:**

Unit	Book	Topics
I	1	Ch.1,2 , Ch.3 (Page 55-71) , Ch. 4 ( Page 84-86),
II	1	Chapter 5
	2	Chapter 1,4,5,6,7
III	1	Chapter 6
IV	1	Chapter 7

**7. Suggestions for Laboratory Sessions:**

As per Practical List,

**8. Accomplishments of the student after completing the course:**

- Ability to understand the concepts, technology and usage of Big Data