BIG DATA ANALYTICS

(Professional Elective-V)/(Common for CSE, IT)

COURSE CODE: 15CT1135 **L T P C**

3 0 0 3

Pre-requisites: Database Management Systems**,** Data Warehousing and Data mining

COURSE OUTCOMES:

At the end of the course the student shall be able to

CO1: Understand big data analytics as the next wave for businesses looking for competitive advantage

CO2: Understand the financial value of big data analytics

CO3: Explore tools and practices for working with big data

CO4: Understand how big data analytics can leverage into a key component

CO5: Learn about stream computing

UNIT-I **(8-10 Lectures)**

INTRODUCTION: Dawn of the Big Data Era, Definition and Features of Big Data, Big Data Value, The Development of Big Data, Challenges of Big Data.

RELATED TECHNOLOGIES: Cloud Computing - Cloud Computing Preliminaries, Relationship Between Cloud Computing and Big Data, IoT - IoT Preliminaries, Relationship Between IoT and Big Data, Data Center, Hadoop - Hadoop Preliminaries, Relationship between Hadoop and Big Data.

UNIT-II **(8-10 Lectures)**

BIG DATA GENERATION AND ACQUISITION: Big Data Generation-Enterprise Data,IoT Data, Internet Data, Bio-medical Data, Data Generation from Other Fields, Big Data Acquisition - Data Collection, Data Transportation, Data Pre-processing.

UNIT-III **(8-10 Lectures)**

BIG DATA STORAGE: Storage System for Massive Data,Distributed Storage System,Storage Mechanism for Big Data - Database Technology, Design Factors, Database Programming Model

UNIT-IV **(8-10 Lectures)**

BIG DATA ANALYSIS: Traditional Data Analysis, Big Data Analytic Methods, Architecture for Big Data Analysis - Real-Time vs. Offline Analysis, Analysis at Different Levels, Analysis with Different Complexity, Tools for Big Data Mining and Analysis.

UNIT-V **(8-10 Lectures)**

BIG DATA APPLICATIONS: Application Evolution, Big Data Analysis Fields - Structured Data Analysis, Text Data Analysis,Web Data Analysis, Multimedia Data Analysis, Network Data Analysis, Mobile Traffic Analysis, Key Applications - Application of Big Data in Enterprises, Application of IoT Based Big Data, Application of Online Social Network-OrientedBig Data, Applications of Healthcare and Medical Big Data, Collective Intelligence, Smart Grid.

TEXT BOOKS:

1. Min Chen, Shiwen Mao, Yin Zhang,Victor C.M. Leung, "*Big Data: Related Technologies, Challenges and Future Prospects*", Springer; 2014 edition.

REFERENCES:

1. Tom White, "*Hadoop- The Definitive Guide*", O'reilly, 2nd Edition.
2. VigneshPrajapati*,"Big Data Analytics with R and Hadoop",*PACKT Publishing,November 2013.

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