NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL
COURSE PLAN AND THE EVALUATION PLAN

1. Course Code : MA855 (Feb-May 2021)
2. Course Title : Big data and Analytics
3. (L-T-P) Credits : (3-0-0) 3
4. Prerequisite : ---
5. Course Instructor : Pushparaj Shetty D.
6. Teaching Department : M.A.C.S
7. Objective of the course

- To provide an in-depth treatment of a big data analytics
- To emphasize on project development on Big data datasets

8. Skill development of the student expected from the course

- Understand the types, characteristics and challenges with digital data.
- Understand the concept of Big Data Analytics and technology landscape.
- Understand the use of open source software framework called Hadoop
- Understand NoSQL databases like MongoDB and Cassandra
- Understand the components of Hadoop ecosystem,

9. Course Coverage (40 Lecture Schedule):

Sl.No.	Contents	Approx. No. of lecture hours
1	Types of Digital Data : Classification: Structured, Semi structured and unstructured data	2
2	Introduction to Big Data: Characteristics, Evolution, Challenges, Data warehousing vs. Big data	3
3	Introduction to Big Data Analytics : Classification of analytics, Challenges facing big data, data science, Data scientist, CAP theorem, BASE consistency theory	6
4	The big data technology landscape : NoSQL : Compare SQL, NoSQL and NewSQL. Hadoop: features, overview, versions of Hadoop	6
5	Hadoop : Introduction to Hadoop, RDBMS Vs Hadoop, Hadoop Techniques: HDFS, managing resources and applications with Hadoop, YARN	10
6	Introduction to other Big Data tools: MangoDB: Cassandra, Map reduce programming, Hive and Pig	8
7	Large Scale Machine Learning, Big Data Analytics on Specific Processors, Hardware and Cluster Platforms for Big Data Analytics.	5

10. References:

1. Seema Acharya and Subhashini C: Big Data and Analytics, First Edition, Wiley India Pvt. Ltd, 2015.
2. Judith Hurwitz, Alan Nugent, Fern Halper, Marcia Kaufman: Big data for dummies.
3. Dirk Deroos, Paul C. Zikopoulos, Roman B. Melnyk, Bruce Brown: Hadoop for dummies.

4. *Michael Minelli, Michele Chambers, Ambiga Dhiraj [2013], "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley CIO.*
5. *David Loshin [2013], "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", Morgan Kaufmann.*
6. *Mike Barlow [2012], " Real-Time Big Data Analytics: Emerging Architecture", [Kindle Ed.], O'Reilly Media.*

11. Evaluation Plan:

1. Quiz 1 :10%
2. Mid Semester Examination : 20%
3. Quiz2 : 10%
4. Project Development : 30%
5. End semester Examination : 30%

Pushparaj Shetty D.
(Course Instructor)