1.	Title of the course	Big Data Systems
2.	Course number	CS601L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CS6101/21
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To understand the cloud computing fundamentals from the perspective of the computation, storage, and management of big data. To learn various big data technologies and architectures with practical use cases.	
10.	**Course Content:** Introduction to cloud computing; Cloud delivery models and services; Key concepts of distributed computing; Managing and scheduling of cloud resources; Compute virtualization: Full and paravirtualization based hypervisors; Storage virtualization: Ceph; Network virtualization: virtual local area network, virtual extensible local area network, and generic routing encapsulation; Lambda architecture; Map reduce frameworks; Hadoop and Spark; File systems such as Hadoop file system and Google file system; Case study: Amazon elastic compute core, Microsoft Azure, and Eucalyptus.	
11.	**Textbook(s):** 1. Marinescu D C, *Cloud Computing Theory and Practice*, 2nd Edition, Morgan Kaufmann (2019). 2. Nathan Marz and James Warren, *Big Data: Principles and Best Practices of Scalable Real-Time Data Systems*, 1st Edition, Manning (2015).	
12.	**Reference(s):** 1. Erl T, Mahmood Z and Martinez J W, *Cloud Computing: Concepts, Technology & Architecture*, Prentice Hall (2014). 2. Stallings W, *Foundations of Modern Networking*, 1st Edition, Pearson (2017).	