



**PARVATHANENI BRAHMAYYA  
SIDDHARTHA COLLEGE OF ARTS &  
SCIENCE**

*Autonomous*

**Siddhartha Nagar, Vijayawada-520010**

*Re-accredited at 'A+' by the NAAC*

**Offered to: M.C.A**

**22CA4L1: BIG DATA AND ANALYTICS LAB**

**Course Description and Purpose:** This laboratory course focuses on hands-on experience with Hadoop installations and commands, implementing word count in Hadoop, Pig installations and commands, MongoDB tasks and operations, including bulk documents, arrays, and MapReduce, as well as Spark installation and operations, including RDDs, data frames, and Spark SQL.

**Course Objectives:** This laboratory course aimed to implement Hadoop Installations, Hadoop Commands, Word Count in Hadoop, Pig Installation, Pig Commands, MongoDB, MongoDB Commands, Tasks On Mongoddb, Bulk Documents in Mongoddb, Arrays in Mongoddb, Map Reduce in Mongoddb, Aggregate Functions in Mongoddb, Mongo Import & Export and Spark Installation, Operations of Rdd, Working With Data Frames, Spark SQL Operations.

**Course Outcomes:**

Upon successful completion of the course, the student will be able to:

**CO1:** Demonstrate foundational Hadoop installations, basic Hadoop commands and implement the Word Count program.

**CO2:** Illustrating a proficiency in setting up Pig for data processing.

**CO3:** Understanding of arrays in MongoDB, explaining their basic use and functionality.

**CO4:** Design and implement advanced tasks in MongoDB

**CO5:** Apply Spark SQL operations.

CO-PO MATRIX							
COURSE CODE	CO-PO	PO1	PO2	PO3	PO4	PO5	PO6
	CO1	M				M	
	CO2	M				M	
	CO3	M				M	
	CO4	H		H			
	CO5	H		H			

1. Hadoop Installation Steps. (CO1,L3)
2. Hadoop Commands. (CO1,L3)
3. Word Count Program in Hadoop. (CO2,L1)
4. Pig Installation Steps. (CO2,L3)
5. Pig Commands. (CO3,L3)
6. Introduction ToMongoddb. (CO3,BTL1)
7. Mongoddb Commands. (CO3,BTL3)
8. Tasks on Mongoddb. (CO4,BTL3)
9. Creating Bulk Documents InMongoddb. (CO4,L6)
10. Arrays in Mongoddb. (CO3,L1)
11. Map Reduce in Mongoddb. (CO4,L3)
12. Aggregate Functions in Mongoddb. (CO4,L3)
13. Mongo Import. (CO4,L3)

- 14. Mongo Export. (CO4,L3)
- 15. Spark Installation. (CO5,L3)
- 16. Operations of Rdd. (CO5,L3)
- 17. Working With Data Frames. (CO5,L3)
- 18. Spark Sql Operations. (CO5,L3)

## Question Paper Pattern for Practical Course

### SEE (LAB) Model Question Paper

#### 22CA4L1: BIG DATA AND ANALYTICS LAB

**Offered to: M.C.A**

**Max. Marks: 70**

**Max. Time: 3Hrs**

**Pass. Min: 28**

<b>(A)</b>	<b>Evaluation Procedure</b>	<b>70 Marks</b>
	I Experiments (Exam & Execution)	50 Marks
	II Viva	<b>10 Marks</b>
	III Record	<b>10 Marks</b>
<b>(B)</b>	<b>CONTINUOUS ASSESMENT (Internal)</b>	<b>30 MARKS</b>

30 marks for the continuous assessment (Day to day work in the laboratory shall be evaluated for 30 marks by the concerned laboratory teacher based on the regularity/ record/viva). Laboratory teachers are mandated to ensure that every student completes 80%-90% of the lab assessments.

**TOTAL: (A)+(B) = 100 MARKS**