22CS3L1: DATA SCIENCE LAB

Course Name	Data Science Lab		L	T	P	C	CIA	SEE	TM
Course Code	22CS3L1		4	0	0	4	30	70	100
Year of Introduction: 2021	Year of Offering: 2021	Year of Revision: 2022			Percentage of Revision: 100				
L-Lecture, T-Tutorial, **P**-Practical, **C**-Credits, **CIA**-Internal Marks, **SEE**-External Marks, **TM**-Total Marks									

Course Description and Purpose: Data Science Lab is a course that illustrates concepts of Tableau Installation, Introduction, Exploring, Data Blending, Uni-variate Charts, Bi-variate Charts, Multi-variate Charts, Trend Line, Word cloud, Bubble Chart, Creating a Simple Dash Board, Creating Maps, Creating a Dash Board, Creating a Story and Data Munging, Importing Graphs, Group and Aggregate Data, Create a Dash Board in Power BI.

Course Objectives: The Data Science Lab course aims to provide comprehensive knowledge and practical skills in Tableau and Power BI, covering installation, data exploration, visualization techniques, dashboard creation, and data munging, enabling students to proficiently analyze and present complex data sets.

Specific objectives include:

1. To implement *Tableau Installation*, *Introduction*, *Exploring*.
2. To implement *Data Blending*.
3. To implement *Uni-variate Charts*, *Bi-variate Charts*, *Multi-variate Charts*.
4. To implement *Trend Line*, *Word cloud, Bubble Chart.*
5. To implement creating a Simple Dash Board, Creating Maps, Creating a Dash Board, Creating a Story and Data Munging, Importing Graphs, Group and Aggregate Data, Create a Dash Board in Power BI.

Course Outcomes:

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

CO1: Implement tableau *Installation*, *Introduction*, *Exploring*.

CO2: Implement *Data Blending.*

CO3: Implement *Uni-variate Charts*, *Bi-variate Charts*, *Multi-variate Charts.*

CO4: Implement *Trend Line*, *Word Cloud, Bubble Chart.*

CO5:To implement creating a *Simple Dash Board*, *Creating Maps*, *Creating a Dash Board*, *Creating a Story* and Data Munging, Importing Graphs, Group and Aggregate Data, Create a *Dash Board* in *Power BI.*

1. Tableau installation. (CO1,L1)
2. Tableau Introduction / Exploring Tableau. (CO1,L1)
3. Data Blending. (CO2,L3)
4. Creating Univariate charts
   a.Bar Chart. (CO3,L3)
   b.Pie Chart. (CO3,L3)
   c. Line Charts
   d. Box plots
5. Dual Axis Chart. (CO3,L3)
6. Shared Axis. (CO3,L3)
7. Creating Bivariate Charts
   a. Cross Tab. (CO3,L3)
   b. Scatter Plot. (CO3,L3)

c. Trend Line. (CO3,L3)

8. Creating Multi-variate Charts

a. Dual Axis Chart. (CO3,L3)

b. Area charts(CO3,L3)

9. Word Cloud. (CO4,L3)

10. Bubble Chart. (CO4,L3)

11. Creating a Simple Dash Board. (CO5,L3)

12. Creating Maps. (CO5, L3)

13. Creating a Dash Board. (CO5, L3)

14. Creating a Story. (CO5, L3)

Power BI:

15. Getting data from web. (CO4, L3)
16. Natural Language Queries. (CO4, L3)
17. Importing Data from Northwind ODATA feed T3_IMF. (CO4, L3)
18. Functions & list Dates in Power Bi. (CO4, L3)
19. Group By and unpivot in Power Bi. (CO4, L3)
20. Merging Queries in Power Bi. (CO4, L3)
21. IPL Statistics in Power Bi. (CO4, L3)
22. Merging Queries in Power Bi. (CO4, L3)
23. Append Query in Power Bi. (CO4, L3)
24. Charts in Power Bi (CO5,L3)
25. Data Modeling in Power Bi.(CO5,L3)
26. Dashboard for Corona Cases Analysis. (CO5,L3)

Note: The list of experiments is not limited to the above list. If the existing laboratory experiments completed in advance, the additional laboratory programs can added , and to be executed in the laboratory.