COURSE MODULE OF THE SUBJECT TAUGHT FOR THE SESSION 2023-24 (ODD SEM)

Course Syllabus with CO's

Faculty Name: Mrs.Neethi M V			**Academic Year: 2024 - 2025**				
Department: Computer Science & Engineering - Data Science							
Course Code	**Course Title**	**Core/Elective**	**Prerequisite**	**Contact Hours**			**Total Hrs/ Sessions**
				L	**T**	**P**	
BAIL504	Data visualization lab	Core	Data analytics	-	-	2	28
Course Objective	**Course Learning Objectives:** This laboratory course enables students to get practical experience in design, develop, implement, analyze and evaluation/testing of CLO1:Understand the Importance of data Visualization for business intelligence and decision making. CLO2:Learn different approaches to understand the importance of visual perception. CLO3:Learn different data visualization techniques and tools. CLO4:Gain knowledge of effective data visuals to solve workplace problems.						

Topics Covered as per Syllabus

1. Getting Started - Tableau Workspace, Tableau terminologies, basic functionalities.

2. Connecting to Data Source – Connecting to Database, Different types of Tableau Joins.

3. Creating a View - formatting charts, adding filters, creating calculated fields and defining parameters.

4. Dashboard Design and Storytelling – Components of Dashboard, Understanding how to place worksheets in Containers, Action filters and its types..

5. Introducing Power BI –Components and the flow of work. Power BI Desktop Interface-The Report has five main areas.

6. Querying Data from CSV - Query Editor, Connecting the data from the Excel Source, Clean, Transform the data

7. Creating Reports & Visualizations - Different types of charts, Formatting charts with Title,
8. . Dashboards - Filters in Power BI, Formatting dashboards.

9. Analysis of revenue in sales dataset:
i) Create a choropleth map (fill the map) to spot the special trends to show the state which has the highest
revenue.
ii) Create a line chart to show the revenue based on the month of the year.
iii) Create a bin of size 10 for the age measure to create a new dimension to show the revenue.
iv) Create a donut chart view to show the percentage of revenue per region by creating zero

access in the
calculated field.
v) Create a butterfly chart by reversing the bar chart to compare female & male revenue based on product
category.
vi) Create a calculated field to show the average revenue per state & display profitable & non-profitable
state.
vii) Build a dashboard.

10. Analysis of GDP dataset:
i) Visualize the countries data given in the dataset with respect to latitude and longitude along with country name using symbol maps.
ii) Create a bar graph to compare GDP of Belgium between 2006 – 2026.
iii) Using pie chart, visualize the GDP of India, Nepal, Romania, South Asia, Singapore by the year 2010.
iv) Visualize the countries Bhutan & Costa Rica competing in terms of GDP.
v) Create a scatter plot or circle views of GDP of Mexico, Algeria, Fiji, Estonia from 2004 to 2006.
vi) Build an interactive dashboard.

11.Analysis of HR Dataset:
i)Create KPI to show employee count, attrition count, attrition rate, attrition count, active employees, and
average age.
ii) Create a Lollipop Chart to show the attrition rate based on gender category.
iii) Create a pie chart to show the attrition percentage based on Department Category- Drag department
into colours and change automatic to pie. Entire view, Drag attrition count to angle. Label attrition count,
change to percent, add total also, edit label.
iv) Create a bar chart to display the number of employees by Age group,
v) Create a highlight table to show the Job Satisfaction Rating for each job role based on employee count.
vi) Create a horizontal bar chart to show the attrition count for each Education field Education field wise attrition – drag education field to rows, sum attrition count to col,
vii) Create multiple donut chart to show the Attrition Rate by Gender for different Age group.

12. Analysis of Amazon Prime Dataset:
i) Create a Donut chart to show the percentage of movie and tv shows
ii) Create a area chart to shows by release year and type
iii) Create a horizontal bar chart to show Top 10 genre
iv) Create a map to display total shows by country
v) Create a text sheet to show the description of any movie/movies.
vi) Build an interactive Dashboard.

Laboratory Outcome	**After studying this course, students will be able to** **At the end of the course the student will be able to:** **1. Design the experiment to create basic charts and graphs using Tableau and Power BI.** **2. Develop the solution for the given real world problem.** **3. Analyze the results and produce substantial written documentation.**

Conduct of Practical Examination:

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation (CIE):

CIE marks for the practical course are 50 Marks.

The split-up of CIE marks for record/ journal and test are in the ratio 60:40.

- Each experiment is to be evaluated for conduction with an observation sheet and record write-up. Rubrics for the evaluation of the journal/write-up for hardware/software experiments are designed by the faculty who is handling the laboratory session and are made known to students at the beginning of the practical session.
- Record should contain all the specified experiments in the syllabus and each experiment write-up will be evaluated for 10 marks.
- Total marks scored by the students are scaled down to 30 marks (60% of maximum marks).
- Weightage to be given for neatness and submission of record/write-up on time.
- Department shall conduct a test of 100 marks after the completion of all the experiments listed in the syllabus.
- In a test, test write-up, conduction of experiment, acceptable result, and procedural knowledge will carry a weightage of 60% and the rest 40% for viva-voce.
- The suitable rubrics can be designed to evaluate each student's performance and learning ability.
- The marks scored shall be scaled down to 20 marks (40% of the maximum marks).

The Sum of scaled-down marks scored in the report write-up/journal and marks of a test is the total CIE marks scored by the student.

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	**BCSL404**	**Title:Analysis & Design of Algorithms Lab**						**Faculty Name: Mrs. Madhu Nagaraj**			
List of Course Outcomes	**Program Outcomes**										
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO-1	3	2	1	2	-	-	-	-	-	-	-	2
CO-2	3	2	1	2	-	-	-	-	-	-	-	2
CO-3	3	2	1	2	-	-	-	-	-	-	-	2
CO-4	3	2	1	2	-	-	-	-	-	-	-	2
CO-5	3	2	1	2								2
Total	**15**	**10**	**5**	10	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**10**

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution - = No Contribution

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	BCSL404	TITLE:Analysis & Design of Algorithms Lab	Faculty Name: Mrs. Madhu Nagaraj
List of Course Outcomes	Program Specific Outcomes		
	PSO1	PSO2	Total
CO-1	3	-	3
CO-2	3	-	3
CO-3	3	-	3
CO-4	3	-	3
CO-5	3	-	3