# VAAGDEVI COLLEGE OF ENGINEERING
## (AUTONOMOUS)
### DATA VISUALIZATION - R PROGRAMMING/ POWER BI

**B.Tech. II Year I Sem.**                                                       L  T  P  C
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**Course Objectives:**
- Effective use of Business Intelligence (BI) technology (Tableau) to apply data visualization
- To discern patterns and relationships in the data.
- To build Dashboard applications.
- To communicate the results clearly and concisely.
- To be able to work with different formats of data sets.

**Lab Problems:**

1.   Understanding Data, What is data, where to find data, Foundations for building Data Visualizations,Creating Your First visualization?

2.   Getting started with Tableau Software using Data file formats, connecting your Data to Tableau,creating basic charts(line, bar charts, Tree maps),Using the Show me panel.

3.   Tableau Calculations, Overview of SUM, AVR, and Aggregate features, Creating custom calculationsand fields.

4.   Applying new data calculations to your visualizations, Formatting Visualizations, Formatting Toolsand Menus, Formatting specific parts of the view.

5.   Editing and Formatting Axes, Manipulating Data in Tableau data, Pivoting Tableau data.

6.   Structuring your data, Sorting and filtering Tableau data, Pivoting Tableau data.

7.   Advanced Visualization Tools: Using Filters, Using the Detail panel, using the Size panels, customizing filters, Using and Customizing tooltips, Formatting your data with colors.

8.   Creating Dashboards &amp; Storytelling, creating your first dashboard and Story, Design for differentdisplays, adding interactivity to your Dashboard, Distributing &amp; Publishing your Visualization.

9.   Tableau file types, publishing to Tableau Online, Sharing your visualizations, printing, and Exporting.

10.   Creating custom charts, cyclical data and circular area charts, Dual Axis charts.

**Course Outcomes:** At the end of the course a student should be able to
- CO-1:   Understand How to import data into Tableau.
- CO-2:   Understand Tableau concepts of Dimensions and Measures.
- CO-3:   Develop Programs and understand how to map Visual Layouts and Graphical Properties.
- CO-4:   Create a Dashboard that links multiple visualizations.
- CO-5:   Use graphical user interfaces to create Frames for providing solutions to real world problems.

**REFERENCE BOOKS:**
1.         Microsoft Power BI cookbook, Brett Powell, 2nd edition.
2.         R Programming for Data Science by Roger D. Peng (References)

3.        The Art of R Programming by Norman Matloff Cengage Learning India.