**Lab Plan**

**Name of the Course:** Data Analytics and Visualization

**Year/Sem/Class:** AI and DS / Sem VI / D11AD

**Prerequisite:** Python and R Programming.

**Lab Objectives:**

1 To effectively use libraries for data analytics.

2 To understand the use of regression Techniques in data analytics applications

3 To use time series models for prediction.

4 To introduce the concept of text analytics and its applications.

5 To apply suitable visualization techniques using R and Python.

**Lab Outcomes:**

1 Explore various data analytics Libraries in R and Python.

2 Implement various Regression techniques for prediction

3 Build various time series models on a given data set.

4 Design Text Analytics Application on a given data set.

5 Implement visualization techniques to given data sets using R .

6 Implement visualization techniques to given data sets using Python.

**List of Experiments**

| **Weeks** | **Lab Experiments** | **CO** | **Date of Submission** |
| --- | --- | --- | --- |
| 1 | Getting introduced to data analytics libraries in Python and R | LO1 | Week 2 |
| 2 | Simple Linear Regression in Python/R. | LO2 | Week 3 |
| 3 | Multiple Linear Regression in Python/R | LO2 | Week 4 |
| 4 | Time Series Analysis in Python/R. | LO3 | Week 5 |
| 5 | Implementation of ARIMA model in python / R. | LO3 | Week 6 |
| 6 | Text analytics: Implementation of Spam filter/Sentiment analysis in python/R | LO4 | Week 7 |
| 7 | WAP to implement any two visualizations in comparing categories in R using different Libraries. | LO5 | Week 8 |
| 8 | WAP to implement any two visualizations in the relationship category in PYTHON using different Libraries. | LO6 | Week 9 |

**Grading for Credit Based Grading System (CBSGS)**

| **Sr. No.** | **Range** | **Grade** | **Grade Point** |
| --- | --- | --- | --- |
| **1** | **80 and above** | **Outstanding (O)** | **10** |
| **2** | **75.00 – 79.99** | **Excellent (A)** | **9** |
| **3** | **70.00 – 74.99** | **Very Good (B)** | **8** |
| **4** | **60.00 – 69.99** | **Good (C)** | **7** |
| **5** | **50.00 – 59.99** | **Fair (D)** | **6** |
| **6** | **45.00 – 49.99** | **Average (E)** | **5** |
| **7** | **40.00 – 44.99** | **Pass (P)** | **4** |
| **8** | **Less than 40.00** | **Fail (F)** | **0** |

**Rubrics**

| Program Execution | 5 |
| --- | --- |
| Documentation | 3 |
| Timely Checked | 2 |
| Viva | 5 |
| Total | 15 |

**EXTRA ACTIVITIES**

| **ACTIVITY** | **DETAILS** |
| --- | --- |
| **Lab** | yes |
| **Lecture** | yes |
| **Assignment / Case Study** | yes |
| **Quiz** |  |
| **Others** |  |

**Mr. Jitendra Madavi**