PROBABILITY AND STATISTICS LAB SYLLABUS

1. Introduction

- Understanding Data Types
- Importing and Exporting Data

2. Computing Summary Statistics

- Plotting and Visualizing Data

3. Tabulation and Graphical Representations

- Creating tables and charts for data representation

4. Correlation and Simple Linear Regression

- Applying Correlation to a Real Dataset
- Simple Linear Regression Model
- Computing and Interpreting the Coefficient of Determination (R^2)

5. Multiple Linear Regression

- Applying Multiple Linear Regression to a Real Dataset
- Computing and Interpreting the Multiple Coefficients of Determination

6. Fitting Probability Distributions

- Binomial Distribution
- Normal Distribution
- Poisson Distribution

7. Hypothesis Testing

- Testing of Hypothesis for One-Sample Mean and Proportion from Real-Time Problems
- Testing of Hypothesis for Two-Sample Means and Proportion from Real-Time Problems

8. t-Test

- Applying the t-Test for Independent Samples
- Applying the t-Test for Dependent Samples

9. Chi-Square Test

- Chi-Square Test for Goodness of Fit
- Contingency Table Analysis

10. Analysis of Variance (ANOVA)

- Performing ANOVA for Real Dataset
    - Completely Randomized Design
    - Randomized Block Design
    - Latin Square Design