DIT UNIVERSITY DEHRADUN

**SCHOOL OF COMPUTING**

Lab Manual for the Academic Year 2025-26

**Subject**: Machine Learning

Subject code: CSF344/CSN344

**Program**: B.Tech (3rd Year) and MCA (2nd year)

**Course coordinator**: Dr. Anushikha Singh

**List of Experiments**

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| S. No. | Title of experiment |
| 1. | Exp 1: Environment Set-up   1. Download set-up files 2. Installation 3. Environment Set-up 4. Demo Program |
| 2. | Exp 2: Data Handling   1. Downloading Dataset 2. Import/Export Dataset Files 3. Summarization of dataset |
| 3. | Exp 3: Data Pre-processing   1. Missing Value 2. Outlier Handling 3. Data formatting and transformation |
| 4. | Exp 4: Descriptive Statistics   1. variance, standard deviation, shape – skewness, kurtosis, percentiles, five point summary 2. boxplots, histograms, bar plot, pie chart, scatter plot, two way tables, 3. covariance, correlation analysis, Chi-Square test for two way tables |
| 5. | Exp 5: Supervised Learning- Regressions   1. Linear Regression with one variable 2. Linear Regression with multiple variable 3. Polynomial regression |
| 6. | Exp 6: Supervised Learning- Classifications   1. Logistic Regression 2. Decision Tree 3. k-Nearest Neighbours 4. Support Vector Machine |
| 7. | Exp 7: Unsupervised Learning- Clustering   1. K-means clustering 2. Hierarchical clustering |
| 8. | Exp 8: Dimensionality reduction techniques   1. Principal Component Analysis (PCA) 2. Independent Component Analysis (ICA) |