

**Panipat Institute of Engineering & Technology (Department of CSE-AI&ML)****Subject:Data Science With R-Programming Code:-SPC-CS-AIML-401  
Semester: 7th**

<b>SNo</b>	<b>Topic</b>	<b>CO Covered</b>	<b>Assignment No.</b>	<b>Teaching Methodology</b>
1	<b>Unit I:</b> Introduction to Data Science - Data Science,	CO1	Assignment No.1	PPT& Board
2	History of Data Science	CO1	Assignment No.1	PPT
3	Data Science Process, Benefits and Uses of data science and big data,	CO1	Assignment No.1	PPT
4	How does Data Science relate to other fields,	CO1	Assignment No.1	PPT
5	Data science tools, Data analysis and its types.	CO1	Assignment No.1	PPT& Board
6	Data Preprocessing Introduction,	CO1	Assignment No.1	PPT& Board
7	Data types and forms,	CO1	Assignment No.1	PPT& Board
8	Various data preprocessing operations -Data cleaning, data integration,	CO1	Assignment No.1	PPT& Board
9	Data Transformation, Data Reduction, Data Discretization	CO1	Assignment No.1	PPT& Board

10	<b>Unit II</b> Data plotting and visualization – Introduction, Data visualization software, Data visualization libraries,	CO2	Assignment No.2	PPT & Board
11	Types of data visualization, Basic and specialized data visualization tools.	CO2	Assignment No.2	Board
12	Statistical Data analysis and probability:	CO2	Assignment No.2	Board
13	Role of statistics and probability in data science,	CO2	Assignment No.2	PPT & Board
14	Descriptive statistics –	CO2	Assignment No.2	PPT & Board
15	Measures of frequency, central tendency, dispersion, position,	CO2	Assignment No.2	PPT & Board
16	Dependence and Independence	CO2	Assignment No.2	PPT & Board
17	Conditional Probability, Bayesian probability,	CO2	Assignment No.2	PPT & Board
18	Random Variables, probability distribution	CO2	Assignment No.2	PPT & Board
19	<b>UNIT -III</b> Introduction to R Programming: What is R, Uses, Advantages and disadvantages,	CO3	Assignment No.-3	PPT

20	Basics in R- Syntax, Comments in R,	CO3	Assignment No.-3	PPT
21	Reserved Words, Identifiers, Constants, Variables,	CO3	Assignment No.-3	Board& Notes
22	Operators and its precedence,	CO3	Assignment No.-3	Board& Notes
23	Strings -Reading strings.	CO3	Assignment No.-3	Board& Notes
24	Data types and operations in R:	CO3	Assignment No.-3	Board & Notes
25	Basic Data types, Vectors, Lists,	CO3	Assignment No.-3	Board & Notes
26	Matrices, Arrays,	CO3	Assignment No.-3	Board & Notes
27	Factors, Data Frames, Data type conversion	CO3	Assignment No.-3	Board & Notes
28	<b>UNIT -IV</b> Connecting R to external Interfaces: CSV Files: Getting and Setting working Directory, creating, reading, analyzing, writing,	CO4	Assignment No.4	PPT
29	Microsoft Excel: Install xlsx package, verifying and loading, creating, reading, writing.	CO4	Assignment No.4	PPT
30	Machine Learning for Data Science: Regression Methods-,	CO4	Assignment No.4	PPT
31	Linear, polynomial and logistic	CO4	Assignment No.4	PPT
32	Classification methods,	CO4	Assignment No.4	PPT

33	Clustering Methods,	CO4	Assignment No.4	PPT
34	Hidden Markov Model	CO4	Assignment No.4	PPT
35	Data Science Case studies – Data science in Healthcare, Data	CO4	Assignment No.4	PPT
	Science in Ecommerce,	CO4	Assignment No.4	
36	Data Science in Entertainment Industry (preferably on Tableau)	CO4	Assignment No.4	PPT