

CRITERIA 1.2.1

Assessment Year 2018-19

**LESSON PLAN-DATA
ANALYTICS**

Certified Course in R and Machine learning

JIMS

Learning Outcome of the course would be:

1. Develop understanding of the basic and advanced R programming.
2. Strengthen the ability to frame and formulate functions in R.
3. Deepen the ability to interpret with the help of various live examples.

Fees: ₹ 1,50,000/-

Duration: 40 Hours

Mode: Hands on, Instructor Led

Minimum Number of Participants: 40

Course Content

Module	Topics	Number of Hours
1	Exploring R: <ul style="list-style-type: none"> ❖ Introduction to R language ❖ How it works ❖ Working with Rscript ❖ Saving work in R 	2
2	Implementing Expression: <ul style="list-style-type: none"> ❖ Grouped Expressions in R ❖ Regular Expressions ❖ Decision Making ❖ Loops ❖ Date and Time options in R 	4
3	Essential Data Structure in R: <ul style="list-style-type: none"> ❖ Vectors ❖ Matrix ❖ Arrays ❖ Lists ❖ Data Frames ❖ Functions 	4
4	Implementing Strings in R: <ul style="list-style-type: none"> ❖ Character Strings in R ❖ Empty strings ❖ Strings and R objects ❖ String Manipulations 	4



5	Visualizing and analyzing Data in R: <ul style="list-style-type: none"> ❖ Tabulation ❖ Graphical methods ❖ Graphical Analysis 	4
6	Descriptive Statistics using R <ul style="list-style-type: none"> ❖ Central Tendency -Mean and Weighted Mean and Geometric Mean, Median, Mode, Percentiles and Quartiles ❖ Dispersion - Variance, Standard Deviation and Range, Interquartile Range and Coefficient of Variation ❖ Numerical Measures: Z-Scores, Chebyshev's Theorem, Empirical Rule and Detecting Outliers ❖ Exploratory Data Analysis – Five – Number Summary, Box Plot ❖ Measures of Association: Covariance and Correlation Coefficient 	4
7	Linear Regression using R <ul style="list-style-type: none"> ❖ Linear Regression Analysis ❖ Formulation of Regression Model ❖ Bivariate Regression ❖ Statistics Associated with Bivariate Regression Analysis ❖ Conducting Bivariate Regression Analysis ❖ Multiple Regressions ❖ Conducting Multiple Regression 	4
8	Logistic Regression using R <ul style="list-style-type: none"> ❖ Logistic Function ❖ Single Predictor Model ❖ Determine Logistic Cut off ❖ Estimated Equation for Logistic Regression 	4
9	Naïve Bayes Classification <ul style="list-style-type: none"> ❖ Naïve Bayes Introduction ❖ Probabilistic Basics and Probabilistic Classification ❖ Characteristics of Naïve Bayes ❖ Real Time Case study using Naïve Bayes ❖ Advantage and Shortcoming of Naïve Bayes 	4
10	Live Project	4

