



Introduction to Data Science using R SWAYAM Prabha Course Code - S18

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DEPARTMENT	Computer Science
INSTITUTE	Gitta PVT.LTD an IIT-M incubated company
Course Outline	<p>This curriculum is developed to help participants appreciate data science and train them to perform basic data analytics activities</p> <p>The course is designed to introduce:</p> <ul style="list-style-type: none"> ● The statistical foundations required for data science ● R as a programming language for data science ● Data visualization techniques ● The first level of machine learning algorithms ● Practical capstone case studies

COURSE DETAILS

S. No	Module ID/ Lecture ID	Lecture Title/Topic
1	LECTURE 1	Introduction to Data Analytics and Big Data
2	LECTURE 2	R Installation
3	LECTURE 3	R Fundamentals
4	LECTURE 4	Basics of Programming in R - Part 1
5	LECTURE 5	Basics of Programming in R - Part 1
6	LECTURE 6	Recasting & Joining Dataframes
7	LECTURE 7	Joining Dataframes

8	LECTURE 8	Arithmetic, Logical & Matrix Operations
9	LECTURE 9	Matrix operations
10	LECTURE 10	Control Structures
11	LECTURE 11	Functions in R - Part 1
12	LECTURE 12	Functions in R - Part 1
13	LECTURE 13	Data Visualization in R- Basic Graphs
14	LECTURE 14	Data Visualization using Ggplot - Part 1
15	LECTURE 15	Data Visualization using Ggplot - Part 2
16	LECTURE 16	Data Visualization using Ggplot - Part 3
17	LECTURE 17	Descriptive Statistics - Part 1
18	LECTURE 18	Descriptive Statistics - Part 2
19	LECTURE 19	Descriptive Statistics - Part 3
20	LECTURE 20	Visualizing Normal Distribution in R
21	LECTURE 21	Visualizing Binomial Distribution in R
22	LECTURE 22	R functions Associated with Distributions
23	LECTURE 23	Descriptive Statistics -Hands-on
24	LECTURE 24	R-Exercise
25	LECTURE 25	Data Aquisition
26	LECTURE 26	Data Wrangling
27	LECTURE 27	Joining files and cleaning
28	LECTURE 28	Logical checks-1
29	LECTURE 29	Logical checks-2
30	LECTURE 30	Data Imputation

31	LECTURE 31	Sampling Methods & Data Partition
32	LECTURE 32	Case study data preparation part 1
33	LECTURE 33	Case study data preparation part 2
34	LECTURE 34	Case study data preparation part 3
35	LECTURE 35	Inferential Statistics part 1
36	LECTURE 36	Inferential Statistics part 2
37	LECTURE 37	Inferential Statistics part 3
38	LECTURE 38	Inferential Statistics - Hands-on
39	LECTURE 39	Linear Algebra for Data Science
40	LECTURE 40	Linear Algebra Solving Linear Equations part 1
41	LECTURE 41	Linear Algebra Solving Linear Equations part 2
42	LECTURE 42	Linear Algebra Dist Hyperplanes Eig Values Vectors Part 1
43	LECTURE 43	Linear Algebra Dist Hyperplanes Eig Values Vectors Part 2
44	LECTURE 44	Linear Algebra Dist Hyperplanes Eig Values Vectors Part 3
45	LECTURE 45	Linear Algebra Dist Hyperplanes Eig Values Vectors Part 4
46	LECTURE 46	Solving Data Analysis Problem
47	LECTURE 47	Linear Algebra - Hands-on
48	LECTURE 48	Predictive Modelling
49	LECTURE 49	Linear Regression
50	LECTURE 50	Model Assessment
51	LECTURE 51	Diagnostics to Improve Linear Model Fit
52	LECTURE 52	Simple Linear Regression Model Building - Hands-on
53	LECTURE 53	Simple Linear Regression Model Assessment_1 - Hands-on

54	LECTURE 54	Simple Linear Regression Model Assessment_2 - Hands-on
55	LECTURE 55	Muliple Linear Regression
56	LECTURE 56	Cross Validation
57	LECTURE 57	Multiple Linear Regression - Hands-on
58	LECTURE 58	Case Study Regression
59	LECTURE 59	Classification
60	LECTURE 60	Logisitic Regression_1
61	LECTURE 61	Logisitic Regression_2
62	LECTURE 62	Performance Measures
63	LECTURE 63	Practical-Logistic Regression
64	LECTURE 64	K - Nearest Neighbors (KNN)
65	LECTURE 65	K - Nearest Neighbors (KNN) - Hands-on
66	LECTURE 66	K - means Clustering
67	LECTURE 67	K - means Clustering - Hands-on
68	LECTURE 68	Case Study Classification - Part 1
69	LECTURE 69	Case Study Classification - Part 2
70	LECTURE 70	Case Study Classification - Part 3