

# Data Science

Sl. No.	Lesson Name	Topic No.	Topic Name (Slide wise breakup)
1	<i>Data Science Overview</i>	1.1	Introduction to Data Science
		1.2	Different Sectors Using Data Science
		1.3	Purpose and Components of Python
		1.4	Key Takeaways
2	<i>Data Analytics Overview</i>	2.1	Data Analytics Process
		2.2	Knowledge Check
		2.3	Exploratory Data Analysis(EDA)
		2.4	EDA-Quantitative Technique
		2.5	EDA Graphical Technique
		2.6	Data Analytics Conclusion or Predictions
		2.7	Data Analytics Communication
		2.8	Data Types for Plotting
		2.9	Data Types and Plotting
3	<i>Statistical Analysis and Business Applications</i>	3.1	Introduction to Statistics
		3.2	Statistical and Non-statistical Analysis
		3.3	Major Categories of Statistics
		3.4	Statistical Analysis Considerations
		3.5	Population and Sample
		3.6	Statistical Analysis Process
		3.7	Data Distribution
		3.8	Dispersion
		3.9	Knowledge Check
		3.10	Histogram
		3.11	Knowledge Check
		3.12	Testing
		3.13	Knowledge Check (MCQ'S)
		3.14	Correlation and Inferential Statistics
4	<i>Mathematical Computing with Python (Numpy)</i>	4.1	Introduction to Numpy
		4.2	Activity- Sequence it Right
		4.3	Demo 01-Creating and Printing an ndarray
		4.4	Knowledge Check
		4.5	Class and Attributes of ndarray
		4.6	Basic Operations
		4.7	Activity-Slice It!
		4.8	Copy and Views
		4.9	Mathematical Functions of Numpy
	Code based Assignment as Homework.		
5	<i>Scientific Computing with Python (Scipy)</i>	5.1	Introduction to SciPy
		2.2	SciPy Sub Package - Integration and Optimization
		5.3	Knowledge Check
		5.4	SciPy sub package
		5.5	Demo - Calculate Eigen values and Eigenvector
		5.6	Knowledge Check
		5.7	SciPy Sub Package - Statistics, Weave and IO
6	<i>Data Manipulation with Pandas</i>	6.1	Introduction to Pandas
		6.2	Knowledge Check
		6.3	Understanding DataFrame
		6.4	View and Select Data Demo
		6.5	Missing Values
		6.6	Data Operations

		6.7	Knowledge Check
		6.8	File Read and Write Support
		6.9	Activity- Sequence it Right
		6.10	Pandas Sql Operation
7	<i>Machine Learning with Scikit-Learn</i>	7.1	Machine Learning Approach
		7.2	How it Works
		7.3	Supervised Learning Model Considerations
		7.4	Knowledge Check
		7.5	Scikit-Learn
		7.6	Knowledge Check
		7.7	Supervised Learning Models
		7.8	Unsupervised Learning Models
		7.9	Pipeline
		7.10	Model Persistence and Evaluation
		7.11	Knowledge Check
8	<i>Data Visualization in Python using Matplotlib</i>	8.1	Introduction to Data Visualization
		8.2	Knowledge Check
		8.3	Line Properties
		8.4	(x,y) Plot and Subplots
		8.5	Knowledge Check
		8.6	Types of Plots
			Knowledge Check (MCQ'S)
9	<i>Web Scraping</i>	9.1	Understanding and Searching the Tree
		9.2	Navigating options
		9.3	Demo Navigating a Tree
		9.4	Knowledge Check
		9.5	Modifying the Tree
		9.6	Parsing and Printing the Document
		9.7	Choose a project
10	<i>Python Integration with Big Data Science</i>	10.1	Why Big Data Solutions are Provided for Python
		10.2	Hadoop: Core Components
		10.3	Python Integration with HDFS
		10.4	Demo 1 - Using Hadoop Streaming for Calculating Word Count
11	<i>Course Recap and Two Industry based Projects</i>		Summarize the entire course concepts
			Concepts to be re-visited based on learner feedback
	<i>Recap of the entire session</i>		Finish the test to get certified