Syllabus

Junior Data Analyst

S No.	NOS/Module Name	Topics	Duration (Hours)		Learning Outcomes
			Theory	Lab	
1	Perform basic calculation using spreadsheet	• Introduction to data analytics and data science, windows and spreadsheet	15	15	• Students will be able to Understand the features of Spread sheet • Students will able to learn about Creating and saving worksheet and workbook. • Students will be able to understand the concepts of Layouts, text formats, alignment. • Students will be able to understand the Basic functions and formulas, sorting. • Students will understand the graphs in excel.
2	Manage structured data	• Database concepts	15	15	• Students will introduce to the concept of databases. • Students will discuss about the advantages of DBMS • Students will understand the Concept of keys: candidate key, primary key, alternate key, Foreign key • Students will understand the Fundamental integrity rules: entity integrity, referential integrity. • Students will be able to understand the Entity-relationship model .ER-diagram • Students will be able to SQL • Students will have Knowledge Discovery in Databases, Data Mining, Data warehouse. • Students will be able to Migrate data from source to data warehouse, cleaning, aggregation operations.

3	Analyze data using spreadsheet tool	• Fundamental of statistics for data analyst, data analytics with spreadsheet • Pivot Table • What if Analysis for Analytics	30	60	• Students will learn about the concept of Data, table & formatting • Students will learn about Conditional formatting in Excel with exercises and examples . • Students will learn about how the concepts of charts and Advanced charting • Students will learn about Pivot Table and Data analysis using Pivot Table.. • Students will learn about Data validation in Excel • Students will learn about Filtering and Advanced filtering. • Students will learn about What if analysis, Role of Maths and Statistical techniques in Data Science, Probability and Statistics, Regression analysis, Descriptive statistics, Linear Regression
4	Manage data in Open source tool	• Basic Linux (including calc) • Installation of Ubuntu • Understanding Linux Files/Directories • Basic commands and Permissions	15	15	• Students will learn about the Introduction to Virtual Machine, creating and configuring Virtual Machine • Students will work on the Linux History, Benefits of Linux, Different Flavors of Linux, Introducing Ubuntu, Installing Ubuntu: Starting Up, Logging in, Exploring the Desktop, Ubuntu Basics, Browsing the File System, Understanding File System Concept, Managing Files, Real and Virtual Files, Mounting, File Searches, File Size, File Space • Students will explore about Viewing Text Files, Using a Command Line Text Editor, Creating Files, Searching through Files, Comparing Text Files, Copying, Moving, Managing Files. • Students will learn about Ubuntu Commands, Running Basic commands, Piping and Filtering Commands, Directory and File handling commands. Users, Groups and Permissions, Root and Other Users, Adding and Deleting Uses and Groups, Adding and Changing Passwords, Users and File Permissions.
5	Visualize data graphically	• Tableau	20	40	• Student will have an Introduction to Tableau. • Student will learn about Connecting to Excel. • Student will learn about Connecting to CSV Text Files. • Student will learn about Connecting to Databases Analyzing. • Student will learn about Formatting, Sorting and charts.

6	Installation of Hadoop Framework and Java Programming	• Introduction to Hadoop Framework and Core Java	15	15	• Students will learn about the Installation of Hadoop and setting of the environment • Students will learn about the Java concepts • Students will learn about the Oops concepts in Java. • Students will learn about the Looping techniques in Java • Students will learn about the Methods • Students will learn about the Method Overloading, Method Over-riding techniques in Java • Students will learn about the Arrays • Students will learn about Hadoop Distributed File System (HDFS) • Students will learn about Architecture of Hadoop • Students will learn about Configuring Hadoop Cluster & Students will learn about Hadoop Commands.
7	Manage big data using hadoop	• Big Data analytics using Hadoop (Mapreduce, Hive)	30	30	• Students will be able to understand the concepts of Big Data • Students will be able to understand the Need for analyzing Big Data, its roles in Business Intelligence and decision making. • Students will be able to understand Analysis of Data Using Mapreduce and its Implementation with examples. • Students will be able to understand Hive. Implementation with examples and its Implementation with examples/case study.
8	Front end application development	• Java with Hive	20	40	• Students will be able to learn about Advanced Java. • Students will be able to learn about Applets in Java. • Students will be able to learn about working with Swings -Front end. • Students will be able to learn about Java Database Connectivity JDBC-ODBC Bridge JDBC Drivers Creating DSN Driver Manager, Connection, Statement, Result Set ,ODBC Database URL Statement and it usage with Applet.

9	Implementation of use cases of Data Analytics		20	40	• Student will be able to implement various use cases in data analytics.
Sub Total = 450 hours			**180**	**270**	
10	Employability Skills		60		Students will be able to get the additional skills apart from the technical skills, to be job ready
11	OJT/Project		30		Students will be able to learn the working in a job.
Total Duration			**540**		