

BCOM -Advance Diploma in Data Analytics

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Module: 1	Advance Excel for Data Analytics
Spreadsheet Principles & Screen Layout	
Functions - Logical, Mathematical, Text, Date & Time	
V Look Up, H Look Up	
Index & Match	
Data Validation	
Sorting	
Filters & Advanced Filters	
Data Cleaning - Concatenate, Extracting, Casing, Comments, Substituting, Splitting Columns	
Conditional Formatting	
Go To, Range, Hyperlinks	
IF Condition, Nested IF, SumIF, CountIF, AverageIF	
AND, OR, NOT, Combination	
Pivot Tables & Pivot Charts	
Charts - Pie, Bar, Stacked Bar, Line, Column, Area, Histogram, Scatter	
Charts - Secondary Series, Waterfall, Formatting & Scaling	
Dashboard Designing	
VBA Macros	
Working with Macros for Charts, Pivot Table & Dashboard	

Module: 2	SQL for Data Analytics
Database & RDBMS Concepts	
Executing SELECT, UPDATE, DELETE Statements	
Using Clauses WHERE, ORDER BY, GROUP BY, DISTINCT, UNIQUE, HAVING	
Arithmetic Operators - [*, / , +, -]	
Special Operators - [IN, LIKE, BETWEEN, IS]	
Logical Operators - [OR, AND, NOT]	
Concatenation Operator - []	
Set Operators - [UNION , UNION ALL, INTERSECT, MINUS]	
Aggregating Data using Group Functions - [MAX, MIN, AVG, SUM, COUNT]	
Character Functions [UPPER, LOWER, SUBSTR , LOWER, LENGTH, TRIM]	
Number Functions [CEIL, FLOOR, ABS, SQRT, POWER, ROUND, TRUNC, LEAST]	
Date Functions [SYSDATE, SYSTIMESTAMP, NEXT_DAY, LAST_DAY, ADD_MONTHS]	
Conversion functions [TO_CHAR, TO_DATE, TO_NUMBER]	
Nested Functions	
Data Types - CHAR, VARCHAR, VARCHAR2, NUMBER, INTEGER, DATE, TIMESTAMP, BLOB, CLOB	
Displaying Data from Multiple Tables – Joins	
Types of Joins - Left, Right, Inner, Outer, Cartesian	
Creating Views, Creating Index	
Analytical Functions - MAX, MIN, SUM, COUNT, AVG, ROW_NUMBER, RANK, DENSE_RANK, LEAD, LAG	
Getting nth highest, nth lowest & nth record from the table	

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Module: 3	Data Visualisation using TABLEAU Desktop
The Tableau Application Suite	
Installing Tableau Desktop	
Data Preparation	
Working with Measures & Dimensions	
Working with Marks	
Saving & Sharing Workbooks	
Connecting to multiple source files	
Joins - Left, Right, Inner, Outer / Full	
Unions - Manual, Wildcard	
Editing the meta data	
Hierarchies, Calculated Fields, Table Calculations	
Charts - Bar, Line, Heat Map, Pie, Bullet, Waterfall	
Charts - Formats, Legend, Scaling, Filters	
Aggregate functions, Text Operators, Parameters	
Calculations - Quick Table, Customized Table	
Level of Detail (LOD) Expressions	
Maps - Symbol, Filled, Density, Layers, With Pie Charts, Tooltip, Mapbox	
Trend Lines, Forecast, Cluster Analysis, Other Statistical Tool	
Interactive Dashboards - Placing of Charts, Title, Navigation, Best Practices	

Module: 4	Python Programming for Data Analysis
INTRODUCTION	
Installation Of Python, Spyder And Jupyter Notebook	
Using Standard Module	
Reading Files – CSV, JSON, XML, HTML	
Creating Tables	
Inserting And Retrieving Table Data	
Updating And Deleting Table Data	
Operators – Arithmetic	
Conditions(If Else, If-Elif-Else)	
Loops (While, For)	
Break And Continue Statements	
Range Functions	
NUMPY PACKAGE	
Numpy Variable & Manipulation	
Datatypes	
Array Creation & Array Math	
Changing The Shape Of An Array	
Stacking Together Different Arrays	
Simple Array Operations	
Splitting One Array Into Several	
Universal Functions	

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Indexing
Slicing And Iterating
Copies And Views
Functions And Methods Overview
Linear Algebra
PANDAS PACKAGE
Descriptive Analysis using Pandas
Data Manipulation using Pandas
Groupby function using Pandas
Sorting data using Pandas
Reading From Csv, Exporting To Csv, Reading From Txt, Exporting To Txt, Reading From Excel, Exporting to Excel
Combining Data From Various Sources
Converting Between Different Kinds Of Formats
Finding Minimum, Maximum, Outliers
Plotting Data
Slice And Dice Data
Adding/Deleting Columns
Index Operations
Stack/Unstack/Transpose Functions
SCIPY & MATPLOTLIB
Basic & Special Functions using Scipy
Integration & Optimization
Linear Algebra
Statistics using Scipy & Matplotlib
Bar Charts, Histogram, Scatter Plot, Stack Charts
Legend Title Style
DATA CLEANING
Data Cleaning Intro
Combining Multiple Datasets To Get A Single And Clean Dataset
Reshaping Dataset
Sorting And Joins

Module: 5	Statistics for Data Analytics & Machine Learning
Descriptive Statistics – Mean, median, mode, standard deviation, variation	
Univariate, Bivariate and Multivariate Analysis	
Sample Vs Population Statistics	
Random Variables	
Probability Distribution Function	
Binomial Distribution & Normal Distributions	
Central Limit Theorem	
Hypothesis Testing	
Z-Stats Vs T-Stats	
Type 1 & Type 2 Error	

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Confidence Interval
Chi Square Test, Anova Test & F-Test
MACHINE LEARNING - 1
Introduction
Supervised & Unsupervised Machine Learning
Train & Test Data
Model Performance
Overfitting & Underfitting of Model Performance
MACHINE LEARNING - 2
Linear Regression
R Square & Adjusted R Square
Logistics Regression
ROC Curve
MACHINE LEARNING - 3
Decision Tree
Random Forest
Ensemble Approach
Bagging Boosting
Variable Importance
Hierarchical Clustering
K-Means Clustering
Time Series Forecasting using Moving Average & ARIMA Mode