Advance Diploma in Data Analytics

Table of Content

- > Advance Excel for Data Analytics
- > SQL for Data Analytics
- > Data Visualisation using TABLEAU Desktop
- > Python Programming for Data Analysis
- > Statistics for Data Analytics & Machine Learning

Prerequisites

Familiarity with maths and statistics, have passion to develop business acumen & curious about playing with data.

Duration

Total 200 Hours of course

100 Hours of Online Theory

100 Hours of Offline Practical

SEMESTER-WISE SYLLABUS BREAKUP - Adv. Diploma in Data Analytics								
CENTETED		THEORY	PRACTICAL	TOTAL	THEORY	PRACTICAL	TOTAL	TOTAL
SEIVIESTER	NAME OF THE PAPER	HRS	HRS	HRS	MARKS	MARKS	MARKS	CREDITS
1st Sem	Adv. Excel for Data Analytics	20	20	40	60	40	100	4
2nd Sem	SQL for Data Analytics	20	20	40	60	40	100	4
3rd Sem	Data Visualisation using TABLEAU Desktop	20	20	40	60	40	100	4
4th Sem	Python Programming for Data Analysis	20	20	40	60	40	100	4
5th Sem	Statistics for Data Analystics & Machine	20	20	40	60	40	100	4

Examination & Evaluation

Advance Diploma in Data Analytics								
Learning								
Total		100	100	200	300	200	500	20

6th Sem		Ducie at M/auk	DrainathVina	TOTAL	TOTAL
	Pre-Placement Training Project Viva & Project work	Project work	Project viva	MARKS	CREDITS
		60	40	100	4

Certifications

On successful completion of 1st year students will be awarded with "**Certificate** in Data Analytics"

On successful completion of 2nd year students will be awarded with "**Diploma** in Data Analytics"

On successful completion of 3rd year students will be awarded with "**Advance Diploma** in Data Analytics"

Internship

Eligible Students may be offered internship subject to business requirements

Career Options after completing the course

Students in the Data Analytics can work in a range of professions in both the private and public sectors. Career in the following job roles will open up for students who successfully complete the Adv. Diploma.

Job Roles:

- Statistical analyst
- Healthcare Data Analyst
- Operations Analyst
- Data Scientist
- Data Engineer
- Quantitative Analyst
- Data Analytics Consultant

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

Module: 3	Data Visualisation using TABLEAU Desktop			
The Tableau Application Suite				
Installing Tableau Deskt	top			
Data Preparation				
Working with Measures	& Dimensions			
Working with Marks				
Saving & Sharing Work	books			
Connecting to multiple s	source files			
Joins - Left, Right, Inner	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, JS	SON, XML, HTML			
Creating Tables				
Inserting And Retrieving	g Table Data			
Updating And Deleting	Table Data			
Operators – Arithmetic				
Conditions(If Else, If-El	Conditions(If Else, If-Elif-Else)			
Loops (While, For)	Loops (While, For)			
Break And Continue Sta	tements			
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				
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 Analystics & Machine Learning					
Descriptive Statistics – M	Descriptive Statistics – Mean, median, mode, standard deviation, variation					
Univariate, Bivariate and	Univariate, Bivariate and Multivariate Analysis					
Sample Vs Population Sta	atistics					
Random Variables						
Probability Distribution Function						
Binomial Distribution & Normal Distributions						
Central Limit Theorem						
Hypothesis Testing						
Z-Stats Vs T-Stats						
Type 1 & Type 2 Error						
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			