**ANALYTICS CIRCLE**

**India’s Best Data Science Institute**

**Industry-Relevant Job Oriented AI & Data**

**Analytics Courses to Get You Hired!**

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**About Analytics Circle**

Analytics Circle a premier capability building and training solutions firm. It is led by Top MNCs alumni with deep industry experience and a flair for coaching. We endeavor in helping our students acquire and master skills in basic and advanced analytics. Our focus is to enable each student to emerge as an 'Industry-ready' professional and have a successful career through our dedicated placement support.

**APPROACH**

* Outcome-focused pedagogy
* Practical and application based
* Real Life-like assignments and projects
* Extensive industry network for placements

**CONTENT**

* Industry-vetted curriculum
* Hands-on projects for every module
* Industry renowned certification
* Business case studies with real-world challenges

**FACULTY**

* Deep industry experience with a flair for coaching
* 10+ years of cumulative experience with prestigious firms like Wipro, KPMG, Deloitte, EXL and Genpact
* Strong community networks with peers

**BOTTOM LINE**

* Job oriented learning
* Continuous career support
* Experiential learning with high ROI

**Roles within the Data Analytics Team**

* **DATA SCIENTIST**

Collecting, analyzing, and interpreting large data sets

* **DATA ANALYST**

Review data, analyze, and find meaningful insights for business

* **DATA ARCHITECT**

Review and analyze data infrastructure for an organization

* **INFRASTRUCTURE ENGINEER**

Design, build, and deploy entire data infrastructure for an organization

* **BUSINESS INTELLIGENCE ANALYST**

Work with data to make finance and market intelligence reports

**About the Course: Data Science**

* Our Data Science course is designed for absolute beginners with no prior programming background.
* With our comprehensive Data Science course, you learn to analyze data and enable organizations in making data-driven business decisions

**Training Methodology**

**INSTRUCTION**

**INTERACTIVE & BLENDED E-LEARNING WITH 1 YEAR ACCESS TO LMS**

Students can choose & blend various learning formats, encompassing classroom and interactive live online sessions. All students then get access to learning management system for 12 months, keeping in mind the constant upgradation of the courses according to industry standards.

**Benefits**

* Interactive Live classroom Learning at Delhi.
* Live Online streaming facilitates the dynamics that occur in a classroom.

**REINFORCEMENT**

**PRACTICAL HANDS-ON LEARNING**

* Our training includes variety of job oriented hands-on projects with real business and data challenges.
* Crafted by experts to keep you ahead of the curve in industry best practices.
* Our case study-based modules ensure that participants learn practical applications along with the theoretical concepts.

**Program Benefits**

**Distinctive Faculty**

Our faculty members have proven track record with global analytics experience. They are drawn from leading consulting and technology with 10+ years of experience.

**Industry Relevant Curriculum**

Our courses are crafted by experts to keep you ahead of the curve in industry best practices. Case study based modules ensure that participants learn practical applications along with the theoretical concepts. Further to this, new courses are continuously launched and old ones keep evolving as per the latest and upcoming industry trends.

**Placement Guidance**

Strong focus on job relevant skills thereby helping in placements is our key belief. We have an extensive industry network to help students. Students get continuous guidance from our experienced faculty on job applications, interview preparation, conduct mock interviews if required and referring CVs to various companies as and when suitable.

**Experiential Learning**

Industry interface and domain expertise to balance theoretical and practical learning. Our training includes variety of job oriented hands-on projects with real business and data challenges.

**Effective Pedagogy**

High degree of commitment & personal attention is given through small batch size and individual counselling. Hands-on sessions and practice assignments on real life business datasets are included to ensure assimilated learning.

**Placements** **Assistance**

* Our Data Science program with dedicated Placement Assistance. A team of seasoned professionals will help you based on your overall educational background and work experience.
* Job referrals are based on the requirements we get from various organizations and HR consultants. There will be continuous support from our side for as long as you need it.
* Most of our students do get multiple interview calls and good career options based on the skills they learn during the course.
* Our faculty offers dedicated mentoring and support for as long as needed by our students.

**SALARY INSIGHTS**

|  |  |
| --- | --- |
| Type of Opportunity | Salary Range (in INR) |
| Paid Internships | 15,000–30,000 |
| Full Time Jobs | 4,00,000–15,00,000 |

|  |  |
| --- | --- |
| Experience Levels | Salary Range (in INR) |
| 1-3 Years | 4,00,000 –7,00,000 |
| 3-5 Years | 6,00,000–12,00,000 |
| 5+Years | 9,00,000–20,00,000 |

**Projects**

**EXPERIENTIAL LEARNING**

The assignments and case studies are curated using real-life data and problems to ensure that you are equipped with the skills needed for hiring and also deal with the on-job challenges. They cover popular industries and domains to have maximum coverage based on job openings available in the industry.

**KEY INDUSTRIES COVERED:**

* Retail / E-commerce
* BSFI (Banking & Insurance)
* Healthcare
* Telecom
* Hospitality
* Manufacturing

**KEY SKILLS EMPHASIZED:**

* Data Handling, Manipulation, Preparation
* Data Analytics & Visualization
* Exploratory Data Analysis
* Descriptive Analytics
* Diagnostics Analytics
* Predictive Modeling
* Statistical Analysis
* Machine Learning (Supervised, Unsupervised)
* Text Mining & Natural Language Processing
* Model Deployment

**Basic Excel**

● Excel Environment

● Key Terminologies

● Short Cuts

● Key Functionalities

● Copy-paste-paste special

● Formatting & conditional Formatting

● Basic Excel Functions

● Types of Functions

● Relational operators

● Data Sorting, Filtering and Data Validation

● Understanding of Name Ranges

● Pivot tables

● Charts

● Basics of charts

**Introduction to Analytics & Data Science**

● What is analytics & Data Science?

● Business Analytics vs. Data Analytics vs. Data Science

● Common Terms in Analytics

● Analytics vs. Data warehousing, OLAP, MIS Reporting

● Types of data (Structured vs. Unstructured vs. Semi Structured)

● Relevance of Analytics in industry and need of the hour

● Critical success drivers

● Overview of analytics tools & their popularity

● Analytics Methodology & problem-solving framework

● Stages of Analytics

**Basics of Excel Data manipulation using functions**

● Descriptive functions

● Logical functions: IF, and, or, not

● Date and Time functions

● Text functions

● Array functions

● Use and application of lookup functions

● Limitations of lookup functions

● Using Index, Match, Offset, reverse lookup

**Advanced Excel**

**Data analysis and reporting**

● Data Analysis using Pivot Tables - use of row and column shelf, values and filters

● Difference between data layering and cross tabulation, summary reports, advantages

and limitations

● Change aggregation types and summarization

● Creating groups and bins in pivot data

● Concept of calculated fields, usage and limitations

● Changing report layouts - Outline, compact and tabular forms

● Show and hide grand totals and subtotals

● Creating summary reports using pivot tables

**Data Visualization in Excel**

● Overview of chart types - column/bar charts, line/area, pie, doughnut charts, scatter plots

● How to select right chart for your data

● Creating and customizing advance charts thermometer charts, waterfall charts, population

● Pyramids

**Overview of Dashboards**

● What is dashboard & Excel dashboard

● Adding icons and images to dashboards

● Making dashboards dynamic

**Create dashboards in Excel - Using Pivot controls**

● Concept of pivot cache and its use in creating interactive dashboards in excel

● Pivot table design elements - concept of slicers and timelines

● Designing sample dashboard using Pivot Controls

● Design principles for including charts in dashboards - do's and dont’s

**RDBMS & SQL**

**Basic RDBMS Concepts**

● Introduction to Relational Database management system. Why SQL?

● A glance at the tool and its advantages and disadvantages

● Understanding Schema, ERDs and Metadata

**Introduction to MS SOL Server**

● What is SQL - A Quick Introduction

● Installing MS SQL Server for windows

● Introduction to SQL Server Management Studio

● Understanding basic database concepts

● Getting started

**DDL Commands**

● Creating databases and tables. Understanding data types

● Inserting values into the table

● Altering table properties

● Introduction to Keys and constraints

● Creating, Modifying & Deleting Tables

● Create Table & Create Index statements

● Drop & Truncate statements

● - Uses & Differences

● DD Statements with constraints

● Import and Export wizard to get the data in SQL server from excel files or delimited files

**Accessing data from Multiple Tables**

● Append and Joins

● Union and Union All - Use & constraints

● Intersect and Except statements

● Table Joins - inner join, left join, right join, full join

● Cross joins/ cartisian products, self joins, natural joins etc

● Inline views and sub-queries & it's types

● Optimizing your work

● Update operations with and without joins

**Advanced SQL**

● Creating table copy and database copy

● Views

● Stored Procedures in SQL

● Crud operations using stored procedures

● Window functions in SQL

● Miscellaneous Topics: Rollup and cube

● Keys- Primary Keys, Foreign Keys etc

● Triggers

**Real time projects**

**Data Visualization & Analytics (PowerBI)**

**Introduction**

● Introduction to Power BI

● Installing Power BI Desktop (Signup for PowerBI)

● Various Options in Power BI Desktop

● Views in Power BI Desktop

● Template Apps

● Task pipeline when you are working on a project

**Data Preparation and Modelling**

● Connect and Retrieve data from different sources (csv, excel etc.)

● Query editor in Power BI

● Power Query for cleaning the data

● Power Query Functions – Text, Date, Numeric

● Power Query Conditional Columns

● Clean & transform data with Query Editor

● Define data granularity

● Combining data – Merging & Appending

● Fill Down in Power BI, Grouping, Transpose, Unpivot, Data Types, Replace errors and values,

Keep and Remove rows, Add Remove and Go To Columns

● Work with relationships and cardinality

● Types of Relationships (1:1, 1: Many, Many:1)

● Optimizing for performance

● PBIDS Files

**Data Analysis Expressions (DAX)**

● Introduction to DAX

● Calculated tables, Columns & Measures

● Time Intelligence in DAX

● Frequently Used DAX functions in Real time (Calendar Functions, Filter Functions, Information

functions, Text Functions, Logical Functions, Math functions, Parent & Child functions etc..)

**Reports Development (Visuals in Power BI)**

● Introduction to work with Power BI visuals

● Reports Development in Power BI

● Working with Different Visuals /Charts

● Formatting Options in Reports

● Use a slicer to filter visualizations

● Working with Filters (Page Level, Include/Exclude, Report Level, Cross report Filter)

● Download & use Custom Visuals from the galary

● Add an R or Python visual

● Work with key performance indicators

● Project to Implement the learning's

**Data Driven Story Reports:**

● Introduction to create a data-driven story

● Design a report layout

● Add buttons, bookmarks, and selections

● Creating Interactive reports with bookmarks

● Design report navigation

● Use interactions and drill through

● Comment on reports

● Tune report performance

● Optimize reports for mobile use

**Dashboards**:

● Introduction to dashboards

● Configure data alerts

● Explore data by asking questions

● Add a dashboard theme

● Pin a live report page to a dashboard

● Configure a real-time dashboard

● Configure data classification

● Set mobile view

**Advanced / Other Power BI Concepts**

● Row level Security (Static Row Level Security, User login based row level security,

Organizational level security)

● Dynamic Measures, Filters, Axis in Charts

● Power BI Template file

● Wallpapers, Themes (create custom themes)

**Power BI Analytics:**

● Explore statistical summary

● Identify outliers with Power BI visuals

● Group and bin data for analysis

● Use the Analyze feature

● Use advanced analytics custom visuals

● Review Quick insights

**Publishing workbooks and Workspace**

● Publishing the Reports, Dashboards, APP

● Share data with Colleagues and Others

● Publish & manage report to the web

● Create an app workspace and add users

● Create a QR code to share a tile

● Embed a report in share point Online

**Python- Fundamental**

1. **Introduction to Python**
2. **Features and Applications of Python**
3. **Introduction to Anaconda/Jupyter**
4. **Basics of Jupyter**
5. **Defining variables and rules for naming a variable**
6. **Data types in Python**
7. **Types of Operators in Python**
8. **print() method and its arguments**
9. **input() method**
10. **Strings**

a) String indexing

b) String slicing

c) String methods I - upper, lower, title, capitalize

d) String methods II - startswith, ends with, find, index, count

e) String methods III - isupper, islower, isalpha, isdigit

f) String methods IV - join, split, replace

g) String immutability

**11) Conditional Statements**

a) Understanding indentation

b) If

c) If-else

d) If-elif

e) If-elif-else

f) Nested if

**12) Loops**

a) What are Iterators/iterables?

b) for loops

c) range function

d) while loops

e) break, continue and pass statements

f) for-else

g) while-else

**13) Pattern based problems**

a) Number patterns

b) Alphabet patterns

c) Shapes patterns

**14) User Defined function**

a) def keyword

b) creating a function

c) return keyword

d) Function inside a function

e) Recursion

f) \*args

g) \*\* kwargs

h) Practice problems on Functions

**15) List in Python**

a) What is List - Definition and usage

b) List indexing and slicing

c) Mutable Lists

d) Finding min, max and sum for a given list

e) Iteration in Lists using for and while loops

f)List methods I - append, extend, pop, insert

g) List methods II - sort, reverse, clear, remove,

h) List methods III - index, count

i) List comprehension

**16) Tuple in Python**

a) What is Tuple? - Definition and usage

b) Tuple indexing and slicing

c) Immutable Tuple

d) Iteration in Tuple using for and while I

e) Tuple methods - index and count

**17) Set in Python**

a) What is Set? - Definition and usage

b) Set methods I - union, difference, difference\_update

c) Set methods II - intersection, intersection \_update

d) Set methods III - discard, remove, pop, add, clear, update

f) Set comprehension

**18) Dictionary in Python**

a) What is Dictionary? - Definition and usage

b) Iteration is dictionary using for and while loops

c) Dictionary methods I - keys, values, items

d) Dictionary methods II - get, pop,

e) Dictionary methods III - update, popitem

f) Dictionary comprehension

g) Practice problems on list, tuple, set and dictionary

**19) Inbuilt functions in Python**

a) Enumerate

b) zip

c) map

d) reduce

e) filter

f) lambda function

g) eval

**20) Using fundamental modules in Python**

a) Math Module

b) Random Module

c) OS Module

**Python- Advanced**

**1) Exception handing**

a) Difference between Errors and Exception

b) What is an Exception?

c) Understanding try-except-else blocks of code

d) finally keyword

e) Different types of exceptions

f) Generating and handling exceptions

**2) File Handling**

a) Opening & closing a file

b) Reading .txt files in python

c) Modes of opening a file - read, write, append

d) Writing to a file

e) Understanding file operations - read,

readlines, seek, tell

f) Reading .csv file in Python

g) Data Analysis using File handing

**3) Database connectivity with Sql**

**Server**

a) Installing Sql Server

b) Select statements in SqlServer

c) Understanding Fundamental Sql operations

d) Creating and deleting database

e) Creating table

f) Insert, update and Delete operations in Sql

g) Connecting Python with Sql Server

h) Creating connection with Sql server

i) Creating cursors in Sql Server

j) Executing CRUD operations using Python for data stored in table/collection

**4) DateTime Module in Python**

a) Working with Datetime

b) Year, Month, Date, day, time functions

c) Hour, minutes, seconds functions

d) Converting strings to Date

e) Converting date to strings

f ) Calculating difference between two dates

**5) Object Oriented Programming**

a) Class and Objects

b) Constructor \_init\_\_

c) self keyword

d) Variables inside class - Instance and static

e) Types of Methods

i. Instance Methods

ii. Class methods

iii. Static methods ,

f) Getter and setter methods

g) Understanding Inheritance

h) Types of Inheritance

i. Single Level

ii. Multi Level

iii. Hierarchical

iv. Multiple

i) super method

**6) Generators and Decorators**

a) yield keyword

b) next keyword

c) Understanding Generators

d) Creating decorators with @decorator\_name

**7) Common Python based Interview questions**

**Data Science**

**1) Statistics**

a) What is Statistics?

b) What is Data?

c) Types of data

i . Qualitative Data

ii. Nominal and ordinal Data

iii. Quantitative Data

iv. Discreate and continuous

d) Population and Sample

e) Measures of Central Tendency

i. Mean

ii. Median

iii. Mode

f) Measure of Dispersion

i . Variance

ii. Standard Deviation

iii. Range

iv. IQR

g) Uni-variate Data Analysis

h) Bi-variate Data Analysis

i . Covariance

ii. Correlation

iii. Difference between Covariance and Correlation

**2) Numpy**

**Numpy Array and fundamental concepts**

a) Numpy Array

b) Array of zeros

c) Array of ones

d) Identity matrix

e) Shape of an array/matrix

f) Changing data type of an array

g) Linear Space and Log Space

h) Methods of Creating Numpy Array

i. np.array()

ii.Converting lists to array

iii. Creating array using arrange() function

i) Reshape function of numpy array

j) Random module in numpy

i. np.random.ranint()

ii. np.random.random()

iii. np.random.rand()

iv. np.random.choice( )

**Numpy Indexing and Slicing**

a) Numpy indexing

i. Indexing on 1D array

ii. Indexing on 2D array

iii. Indexing on 3D array

b) Numpy slicing

i. Slicing on 1D array

ii. Slicing on 2D array

iii. Slicing on 3D array

**Numpy Array operations**

a) Operations on Numpy array

i. Adding scalar value to each and every

array value

ii. Adding scaler values row wise

iii. Adding scaler values column wise

iv. Adding array of same dimentions

b) Numpy array functions

i. np.sum() - with different axis value

ii. np.max( )

iii. np.min( )

iv. np.argmin( )

v. np.argmax( )

vi. np.sort( )

c) Adding a new row/column to an array

d) Deleting row/column from an array

e) Iterating over numpy array using np.nditer

f) Array Flatten

g) Matrix Multiplication

h) Matrix Transpose

**Linear Algebra in Numpy**

a) Finding Determinant, and Trace of a Matrix

b) Finding inverse of Matrix

c) Solving Linear Equations

**3) Pandas**

**Series in pandas**

a) Importing pandas

b) What is Series?

c) Creating a Pandas series using

i . Numpy Array

ii. List

iii. Tuple

Iv . From a column of .csv/.xlsx file table

d) Series functions

i . Mean and Median

ii. Sum

iii. Count

iv. Cumsum

**DataFrame in Pandas**

a) What is DaraFarme?

b) Creating DataFrame using

i. Series

ii. Dictionary

iii. Using lists of lists

c) head, tail, sample functions of dataframe

d) Hoc, loc functions on dataframe

e) Difference between Hoc() and loc()

f) Accessing a particular column/ series inside

dataframe

g) Adding a new column/ series to a dataframe

h) Setting index and columns for a dataframe

i) Assigning a column as index

j) Queries in DataFrame

k) Filters in DataFrame

I) Sort index and sort values

m) Finding unique values for a column

n) Pandas describe and info

o) Groupby

p) Data Wrangling

i . Merge

ii. Merge with different joins

iii. Append

iv. Concat

v. Apply

vi. Applymap

vi. Map

q) Data Cleansing

i. Removing Nan values

ii. Fill Nan values

iii. Renaming Columns

iv. Rearrange columns

v. Drop rows

vi. Drop columns

r) Handling DateTime In Pandas

**Pivot table in Pandas**

a) Creating pivot tables in pandas

b) Stack operation on pivot tables

c) Unstack operation on pivot tables

d) Levels in stack and unstack

**4) Matplotlib**

a) Importing matplotlib

b) Creating Charts In matplotlib

i. Bar Chart

ii. Line Chart

iii. Pie Chart

iv. Histogram

v. Box Plot

vi. Scatter Chart

vii. Subplot

**5) EDA**

a) Exploratory Data Analysis

b) 2-3 Projects on Data Analysis