

# Data Science with Python

## What are we offering!

Do you want to shift your career to analytics? Many of our students did that in the past, So can you!!!

## Curriculum:

✓ **Phase 1: Python Programming**

Learn how to do data analysis with Python language- Data cleaning, Data Exploration, reporting and visualization using python libraries like Pandas, NumPy, Matplotlib etc.

✓ **Phase 2: Statistics-**

No previous Background in stats? Don't worry! We are here to make maths simple for you.

✓ **Phase 3: Machine learning-**

- What is the probability that your best friend is going to leave the company in next 1 year?
- Help banks to understand who can be a likely defaulter!
- Honda is going to launch a new car? What should be the optimal price they should set for that?

## What else?

### **We are offering:**

- ✓ 6 Assignments
- ✓ 4 real time industry projects on healthcare, banking and retail
- ✓ Resume that will help you merge your previous experience with data analytics
- ✓ Placement preparation- Question bank, PDF's, E-books, Sharing your CV with our Industry links
- ✓ Certification at end of the course
- ✓ You will be equipped with all the skills on day one of your new analytics job

**Starting packages with Python+ Stats + Machine Learning Skills- As much as you would love to get 😊 -- Still 8-10 lacs is the average starting salary!!**

**Duration- 3 month's weekend course (4-5 hours a week) - Fees- 25K (\$500- International students)**

**Don't want to do Machine learning? Try (Python programming + SQL) - Fees-20K**

## ***Session-1 Introduction to Data Science***

- What is Data Analytics & Data Science
- Different types of Data Analytics (Descriptive, Predictive, Prescriptive)
- What is Artificial Intelligence
- Machine Learning (Supervised & Unsupervised Learning)
- Deep Learning (Artificial Neural Networks, CNN)
- Overview of Banking, Healthcare, Telecom domain
- Real world Applications of Machine Learning & Deep Learning
- What to expect from this course (Salary, Market trends, job roles, Domain)

## ***Session-2 SQL in Python***

- What is SQL
- SQL in Python
- SQL Architecture
- SQL Syntax
- Data Types
- Operators
- Fundamentals of SQL
- Creating Database
- Creating Tables
- Insertion of rows
- Deletion of rows
- Null Values
- Clauses

- Removing Duplicate data
- Sorting data
- Alteration of Data
- Joins
- Relationships in SQL
- Understanding Joins
- Types of Joins
- Functions
- Brief about Functions
- Aggregation Function

### ***Session-3 Complete Practical Session on SQL in Python- Assignemnt Discussion***

## ***Phase 1: Learn the basics of Python language***

### ***Session-4-5 Introduction to Python***

- Introduction to Python Programming
- Basic libraries in python
- Data types and Objects
- Data Types in Python
- Functions in Python
- Introduction to Loops
- Conditional Operators

### ***Data Importing***

- Data import techniques in Python
- Import data from spread sheets and text files into Python
- Install packages used for data import

### ***Objects in Python***

- Lists
- Tuples
- Sets
- Dictionaries

### ***Session-6-7 Numpy- “Numeric python”- Package for mathematical computations***

- Importing Numpy
- Mathematical functions and operators
- Arrays
- Reshaping
- Indexing and Slicing
- Sorting arrays
- Statistical functions

### ***Session-8-9 Pandas- Data Manipulation***

- Creating a data frame
- Reading data from various sources such as CSV, TXT, XLSX,
- Selecting particular rows or columns from data set
- Arranging data in ascending or descending order
- Filtering data based on some conditions
- Summarizing data
- Transpose data
- Merging and concatenating two datasets
- Iterate over the rows of dataset
- Writing or Exporting data in CSV or Excel format
- Rename variables
- Regular expressions

### ***Session 10- Data Visualization in Python using Matplotlib***

- Introduction to Matplotlib for 2D-3D graphs
- multiple forms of both 2D and 3D graphs, like line graphs, scatter plots, bar charts, and more
- Visualize Geographical data on maps
- Customize graphs, modifying colours, lines, fonts, and more

## ***Phase 2: Session 11-12 Statistics for Business Analytics***

### ***Fundamentals of Statistics***

- Basic statistics; descriptive and summary
- Inferential statistics
- Statistical tests

### ***Data Prep and Reduction techniques***

- Need for data preparation
- Check Skewness of data
- Outlier treatment
- Missing values treatment

### ***Basic Analytics***

- Statistics Basics Introduction to Data Analytics and Statistical Techniques
- Variable Distributions and Probability Distributions
- Normal Distribution and Properties
- Hypothesis Testing Null/Alternative Hypothesis formulation
- P Value Interpretation
- Correlation

## ***Phase3: Machine Learning in Python***

### ***Session-13-14 Linear Regression Model***

- Basics of regression analysis
- Correlation, VIF, missing value imputations and outliers
- Create Linear regression model
- Interpretation of results
- Performance metrics for model.

**Projects: Hands on project for implementing Linear Regression**

### ***Session-15-16 Logistic Regression Model***

- Use cases of Logistic regression model.
- Create a logistic regression model in Python
- Churn prediction models and management
- **Feature Engineering- Feature Creation, Reduction and Selection**
- Sensitivity, specificity, Confusion matrix.
- ROC curve.
- Performance metrics of logistic regression

**Projects: Hands on project for implementing Logistic Regression**

### ***Session-17-18 Clustering***

- What is K-means clustering model
- Create a clustering model in Python.
- Interpreting results to select numbers of clusters for model.
- Checking accuracy of the model.

### **Projects: Hands on project for implementing Clustering**

### ***Session 19: Dimesnsion Reduction- Feature Engineering***

- Feature selection
- Principal component Analysis

### ***Session 20 Introduction to AI, deep learning and other ML Techniques***

- Time Series
- Survival Analysis
- Random Forest
- CNN
- RNN
- LSTM

## Real Time Industry Projects

*Project1: Predicting who will default and who will not for a bank loan or Credit Card*

*Project2: Predicting the optimal price of a car to be launched*

*Project 3: Segmentation of customer base for a retail chain*

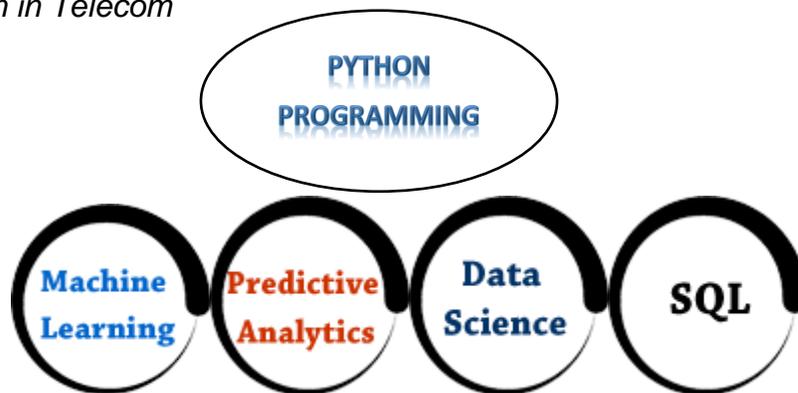
## FINAL ASSESSMENT PROJECT

**Case Study in one of the followings:**

*Specialization in Banking*

*Specialization in Healthcare*

*Specialization in Telecom*



**\*\* Interviews??**

We will help you for Resume preparation/ Mock Interviews/ Placement Preparation at the end of this course. Happy learning!!!!