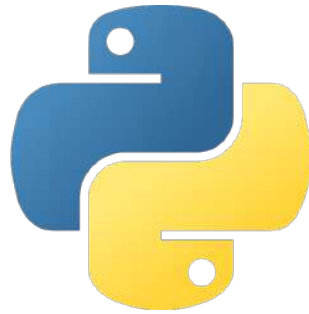
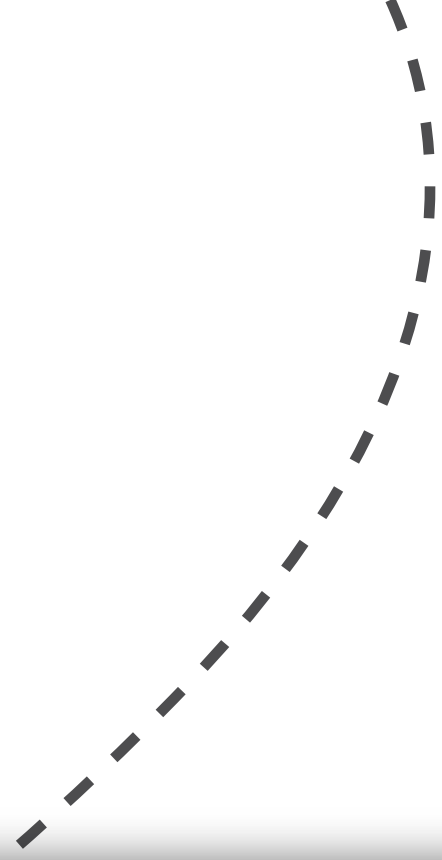


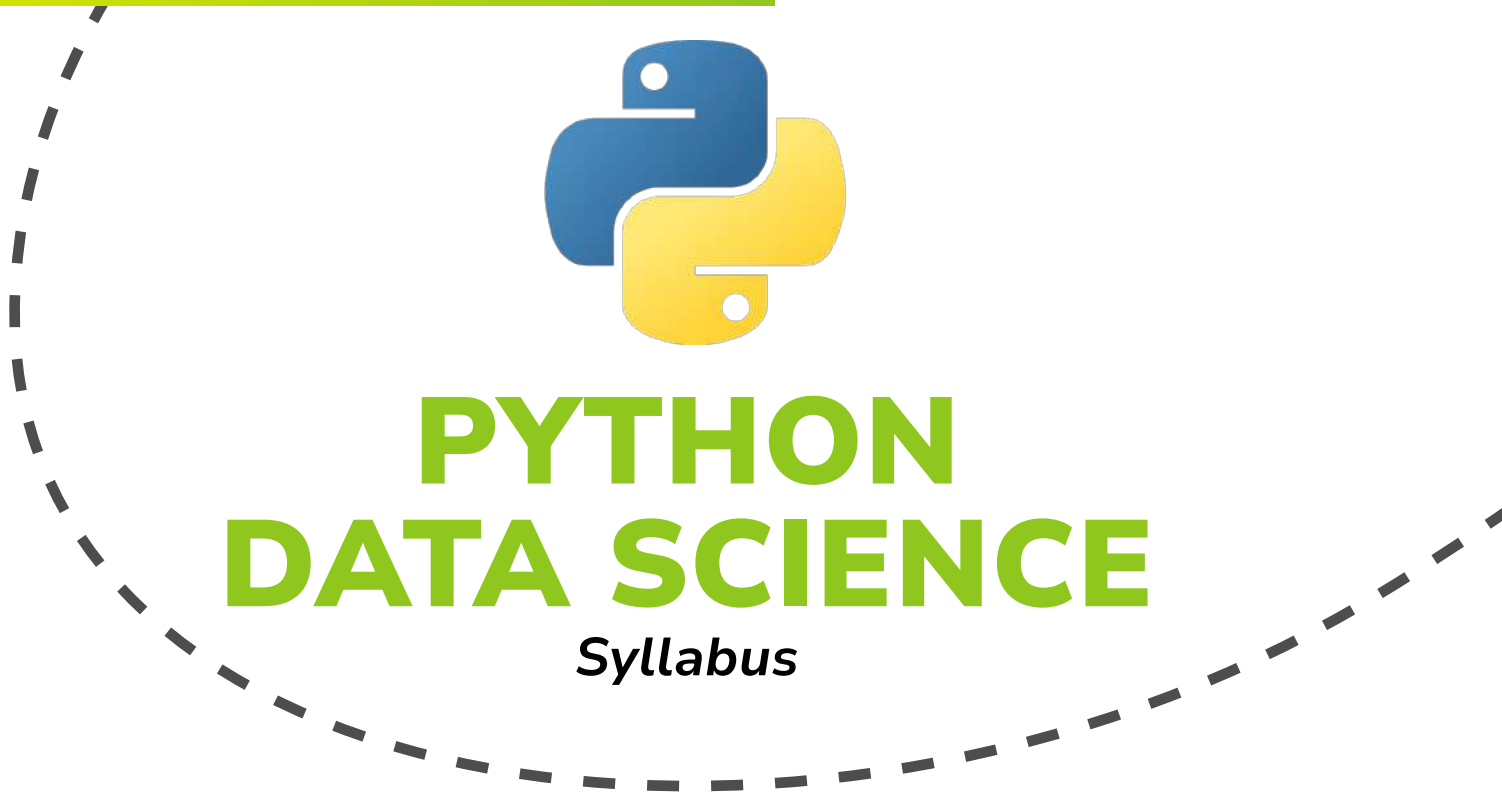


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# **PYTHON DATA SCIENCE**

*Syllabus*



# 1

## Core Python

- *Programming Basics*
- *Functions, Lambda Functions*
- *Data Structures in Python*
- *Object Oriented Programming*
- *Comprehension, Generators, Decorators*
- *Modules and Packages*
- *Exception Handling*
- *File Handling*
- *Multithreading*
- *Regular Expressions*
- *GUI programming using Tkinter*
- *Database Connectivity*
- *Case Study*

# 2

## MySQL

- *Database Normalization*
- *SQL Components and various commands*
- *Data definition Language*
- *Data Manipulation Language*
- *Select Statement, Groupby, having clause, Joins, Subquery*
- *String, Date and Number functions*
- *Views, Index*
- *PLSQL –Stored Procedure, Functions, Cursor, Triggers*
- *Transaction*
- *Case Study*

# 3

## Web Programming

- *HTML5*
- *CSS3*
- *JavaScript*
- *jQuery*
- *Bootstrap*

# 4

## Data Analysis

- *NumPy*
- *Pandas*
- *Plotting using Matplotlib & Seaborn*

## 5

# Data Science

- *Basics of Statistics*
- *NoSQL Introduction*
- *Data Visualization Tools(matplotlib,Seaborn,plotly)*
- *Machine Learning Introduction*
- *Machine Learning techniques (Supervised,semi supervised, unsupervised)*
- *Regression techniques (linear regression, multiple linear regression)*
- *Classification algorithms :*
  - 1) *K Nearest Neighbor*
  - 2) *Decision Trees & Random Forests*
  - 3) *Support Vector Machines*
  - 4) *Logistic regression*
- *Clustering algorithms*
  - 1) *K means, K medoid*
  - 2) *Hierarchical Clustering*
- *Deep Learning Basics*
  - 1) *RNN*
  - 2) *CNN*
- *ML Advance Tools(Tensorflow)*
- *Use cases like NLP(sentiment analysis)*
- *Geographical Plotting*
- *Data Capstone Project*
- *PowerBI*
- *Introduction to Big Data (Spark)*

## 6

# Git & GitHub

- *Introduction*
- *Installation & Lifecycle*
- *Create & clone operation*
- *Perform,Review & commit changes*
- *Push,update,stash,move operation*
- *What is GitHub?*
- *Create a Repository*
- *Create a Branch*
- *Make a Commit*
- *Open a Pull Request*

## 7

# Credit System

- *Mock Interviews (Module wise)*
- *Technical quizzes*
- *Machine Test*
- *Project Presentations*

## 8

# Aptitude

- *Averages and ages*
- *Percentages*
- *Ratio and Proportion*
- *Profit and Loss*
- *Partnership*
- *Speed, distance, and time*
- *Trains*
- *Boats and Streams*
- *Time and Work*
- *Pipes and Cistern*
- *Permutations and Combinations*
- *Probability*
- *Simple Interest*
- *Compound Interest*
- *Numbers and Divisibility Rules*
- *Allegations and mixtures*
- *Analytical Reasoning*
- *Linear sitting arrangement*
- *Circular sitting arrangement*
- *Parallel sitting arrangement*
- *Blood Relation*
- *Distance and Direction*
- *Coding and Decoding*

## 9

# Softskills

- *Introduction to Communication Skills*
- *Confidence Building and Public Speaking*
- *English Grammar*
- *Business English*
- *Advanced Communication Skills*
- *Group Discussion*
- *Resume Building and Cover Letter*
- *Interview Preparation*
- *Email Writing*
- *Dressing / Attire / Grooming*
- *Public Speaking and Presentation Skills*
- *Interpersonal Skills and Assertiveness*
- *Time Management*
- *Stress Management*
- *One to One Counseling Session for needy candidates*

10

## Operating Systems

- *Operating Systems an Overview*
- *Types of Operating Systems*
- *Components of an Operating System*
- *An overview of File Systems*
- *Process and Memory Management*
- *User Management*
- *Operating System Security*
- *Device Drivers*
- *Installing an OS using Virtual Box*
- *Operating Systems in Cloud*

11

## Software Engineering

- *Introduction to Software Engineering*
- *Software Development Life Cycle*
- *SDLC Models*
- *Agile – SCRUM*
- *Requirement Analysis*
- *Project Management*
- *Design*
- *Introduction to UML*
- *Coding / Implementation*
- *Testing*
- *DevOps*

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