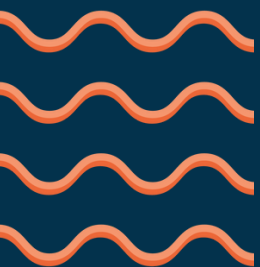# GRAND CIRCUS

A dexian Company

Data Analytics & Engineering with Python Syllabus

Data is the lifeblood of any organization today; the data generated in the last few years accounts for 90% of all the data generated in human history. To have value, this data needs to be analyzed and turned into insights; more and more organizations are turning to Data Analytics and Data Engineering to accomplish that goal.

Data Analytics & Engineering with Python bootcamp

This bootcamp is a fast-paced, immersive program that will equip students with the skill sets required to transition into Data Analytics and Data Engineering roles. Learning is hands-on with daily lab work and several larger group projects.

Part 1: Python & Object Oriented Programming

Python is a programming language that is widely used by data professionals. The course begins by laying a foundation in computer programming using Python.

- Learn the fundamentals of Python programming, such as language-defined data types (int, float, bool, string, list, and dictionary), control constructs (sequence, selection, repetition), program modules (including functions, modules, methods).
- Use programmer-defined classes to demonstrate the ideas of encapsulation, inheritance, interfaces and object oriented program design.
- Design programs to solve practical problems of a scientific nature using both procedural and object-oriented methodologies.
- Learn the basics of Python libraries.

Part 2: Data Analytics

Data analytics involves working with raw data to produce valuable conclusions and insights to the people who need them. This section of the course introduces a variety of techniques for analyzing data.

- Learn how to produce useful insights using statistical analysis of data.
- Learn and demonstrate how to build and assess data-based models.
- Demonstrate skills in data wrangling and management.
- Learn the basics of predictive analysis and Data Science.
- Demonstrate how to use exploratory data analysis (EDA) to perform initial data investigations that will help discover patterns and detect anomalies.

Part 3: Data Engineering

The work of data engineers is to build and architect systems that collect, manage and convert raw data into usable collections of information for business analysts and data scientists. In this portion, explore building data pipelines that will collect, integrate and prepare data to be stored in different data repositories, such as data warehouses and data lakes.

- Explain and develop distributed programming paradigms such as Spark.
- Develop real-time/streaming Applications.
- Develop data integrations (using Kafka).

Final Capstone Project

The crown jewel in the Grand Circus bootcamp experience is your final project. By the end of bootcamp, you'll have a portfolio project that you can share with hiring managers and the skills to describe your work. You'll work in a group to complete a project using the skills you developed. During your project, you get real-world experience not only with the technical aspects of data analytics and engineering but with the career skills required to collaborate with a team.