

**#Learn\_from\_Home**

## **ADVANCED DATA ANALYTICS USING PYTHON**

**Course Code : LFH/DAML/04**

**Duration: 10 - 15 days**

### **Course Syllabus**

#### **INTRODUCTION**

This industry oriented course is developed by both the Software development division & Training division of **ipsr solutions limited**. IPSR is a **public limited IT company** with 20 years of expertise in [Software product development](#), [Training services](#), [Placement services](#) & [Digital Marketing services](#). During the past 2 decades, IPSR has trained candidates from **50+ countries** and helped **40000+ candidates** to build their IT career. Our IT services division is a pioneer in development of **Academic solution products**, incorporating cutting edge technologies like Artificial Intelligence, Data Analytics and Machine learning. Live industry experts from this IT division contribute a major role in delivering this course. Our placement division is having **1500+ placement tie-up companies** and we are conducting [recruitment on all days](#).

The Course curriculum is designed and developed by a team of expertise panel lead by following academicians

❑ **Dr. Mendus Jacob, M.Sc., M.Phil., Ph.D., MloD**

- ❑ M.D & C.E.O - IPSR & Valin Technologies, U.K.
  - ❑ Director - MCA, Marian College, Kuttikkanam (Autonomous)
  - ❑ Former Director of School of Applicable Mathematics, M.G. University. ❑
- Academician and Entrepreneur with 30+ years experience

❑ **Dr. Sunil Job K.A, M.Sc, M.Ed, M.Phil, Ph.D., RHCE**

- ❑ Chief of Academic Solutions - IPSR
  - ❑ Former college Principal and a Specialist in Data Analytics & Machine Learning ❑
- Blogger and a Resource person for National conferences
- ❑ Academician with 25+ years experience



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## What you'll learn

- Do Exploratory and Explanatory data analysis using Python packages.

## Description

This course covers Advanced Data Analytics using Python.

## Course Outcome (CO)

While successfully completing this course, the learner will be able to:

- Do data pre-processing using python
- Do Exploratory and Explanatory data analysis using Python packages.

## What does this course give you?

Skill required to do Data Analytics using Python packages in real world data.

**Prerequisite :** Basic Data Analysis, Python for Data Analytics



## **Course content**

### **What is Data Analytics**

- Data Analytics vs Data Analysis
- What is a dataset
- Need for Dataset structure

### **Data Analytics Workflow Theory**

#### *Preparing Dataset*

- Data Requirement Specification
- Data Collection
- Optional Data Integration
- Data Selection

#### *Exploratory Data Analysis with Descriptive statistics*

- Central tendency
- Standard deviation
- Interquartile range
- Histograms
- Distributions
- Skew
- Kurtosis
- Correlation

#### *Pattern Processing from Data*

- Data Preprocessing
- Data Processing
- Data Post-processing



## **Code running environment**

- Introduction to google colab
- connecting google colab to local data and drive data

## **Data Analytics Workflow Practical**

### **1.Data Collection using Pycaret and Pandas**

### **2.Exploratory Data analysis using Pandas profiling==2.8.0 library and seaborn heatmap(correlation)**

- Drill down in profile Report
- Obtaining irregularities in dataset

Note:For more Dataset with columns more than 30 correlation checks in pandas\_profiling should be turned off or minimal mode should be turned on.

### **3.Data pre-processing Using Python ml libraries(Pycaret setup function and pandas drop duplicates function)**

- Missing value treatment
- Normalization
- transformation
- multicollinearity issue
- outliers issue
- low variance issue
- Dimensionality Reduction for large column datasets
- Setting for GPU usage
  
- Using EDA Report for deciding must do data cleaning steps
- Application of preprocessing steps totally



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## Recommended Learning Path

1. Basic Data Analysis -----> Advanced Data Analysis(zero coding)
2. Basic Data Analysis -----> Advanced Data Analysis-----> Python for Data Analytics
3. Basic Data Analysis -----> Python for Data Analytics-----> Advanced Data Analytics using Python
4. Basic Data Analysis-----> Python for Data Analytics----->Advanced Data Analytics using Python ----> Machine Learning
5. Basic Data Analysis-----> Python for Data Analytics----->Advanced Data Analytics using Python ----> Machine Learning -----> AI with Deep Learning

## Contact Us

IPSR SOLUTIONS LTD.

Merchant's Association Building

M.L. Road, Kottayam - 686001

Kerala, India, Pin-686001

Phone: +91-481 2561410, 2561420, 2301085

Mobile: +91 9447294635, +91 9447169776

Email: [training@ipsrsolutions.com](mailto:training@ipsrsolutions.com)

Website: <http://www.ipsr.edu.in/>

Learn\_from\_Home Portal: <https://lms.ipsr.edu.in/>

We have branches at Kochi, Thiruvananthapuram, Calicut and Bengaluru.



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