



DATA SCIENCE WITH PYTHON

PANDAS . NUMPY . VISUALISATION
EDA . STATISTICS . FEATURE
MODELLING . REPORTING . STORAGE

DURATION	LEVEL	MODULES	MODE
70 Hours	Beginner to Advanced	9	Classroom · Online · Hybrid

01 COURSE OVERVIEW

A complete data science course in Python, from raw files to a communicated result. The course spends its first half on the work that dominates real projects — collection, cleaning, exploration and statistics — and its second half on modelling and communication. Every module uses public datasets from Kaggle and government portals.

Learners produce a portfolio of three notebooks and one dashboard.

- WHO IT IS FOR**
- Graduates targeting data science roles
 - Analysts working in Excel or SQL today
 - Developers moving into data work
 - Research and academic staff

PREREQUISITES

Basic programming logic. Python is taught from the beginning.

02 LEARNING OUTCOMES

01 Load and reshape data from files, APIs and databases.

03 Run exploratory analysis and state findings clearly.

05 Engineer features and build baseline models.

07 Document and publish reproducible notebooks.

02 Clean and validate messy real-world datasets.

04 Apply descriptive and inferential statistics correctly.

06 Visualise results for technical and business readers.

03 MODULE STRUCTURE

9 MODULES

01 PYTHON FOR DATA

Syntax

Functions

Files

Data structures

Comprehensions

Jupyter and Colab workflow

02 NUMPY AND PANDAS

Arrays

Series and DataFrames

Joins

Time series

Broadcasting

Indexing

Group-by

LAB

SALES DATA WRANGLING

03 DATA COLLECTION

CSV and Excel

SQL queries from Python

Data ethics

JSON and APIs

Web scraping basics

LAB

API TO DATAFRAME

04 DATA CLEANING

Missing values

Type errors

Text normalisation

Duplicates

Outliers

Validation rules

LAB

CLEANING A PUBLIC DATASET

05 EXPLORATORY DATA ANALYSIS

Distributions

Segmentation

Anomalies

Correlation

Pivots

Forming hypotheses

LAB

EDA NOTEBOOK

06 STATISTICS

Descriptive statistics

Distributions

Hypothesis tests

Probability

Confidence intervals

A/B testing

LAB

EXPERIMENT ANALYSIS

07 VISUALISATION

Matplotlib

Plotly

Annotation

Seaborn

Chart selection

Dashboard basics

LAB

INTERACTIVE REPORT

08 MODELLING BASICS

Feature engineering

Regression and classification

Metrics

Baseline models

Validation

LAB

PREDICTION NOTEBOOK

09 COMMUNICATING RESULTS

Narrative structure

Reproducibility

Portfolio publishing

Executive summaries

Version control

PROJECT

END-TO-END DATA SCIENCE CASE STUDY

04 ASSESSMENT & CERTIFICATION

Module assignments and labs	25%
Mini projects	20%
Internal assessments	15%
Final project and review	40%

CERTIFICATION

Learners who complete all modules, submit the final project and clear the review receive a course completion certificate from Kaizen Infinities Private Limited. Project work is documented for the learner's portfolio, and interview preparation is included in the closing sessions.

05 CAREER OUTCOMES

ROLES THIS PROGRAMME PREPARES FOR

DATA SCIENTIST

DATA ANALYST

PYTHON DEVELOPER (DATA)

BUSINESS ANALYST

RESEARCH ANALYST

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