hkpc Academy 生產力學院

Certificate in Data Analytics with Gen AI, Python and Power BI

This 2-day course equips professionals with data analytics skills using Gen AI, Python, and Power BI. Learn to wrangle, analyze, and visualize operational, service, and financial data through hands-on exercises and a mini-project.

Master Python (Pandas, Matplotlib) and Power BI to build KPI-driven dashboards and apply simple models for decision support, transforming data into actionable insights.

Programme code	P0000105
Duration and time	20, 24 Nov, 2025 9:30-17:30
Venue	1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon Tong
Medium	Cantonese, supplemented with English terminology
Course fee	HK$7,260/*HK$6,770 for early bird
Prerequisite	Complete Power BI for Business Users or experiences with Power BI Desktop
Bring Your Own Device (BYOD) Requirement	Windows 10 with minimum 2 GB RAM, 20 GB hard disk and menu display in English.

Course Objectives

✓ Understand core concepts in data science and operational, service and financial data analytics

✓ Perform data wrangling, cleaning, and 5 steps in data analytics with Gen AI, Python and Power BI

✓ Build operational, service and financial visualizations and dashboards in Gen AI, Python and Power BI

✓ Apply analytics and simple models for operational, service, financial and business decision support

✓ Design effective BI dashboards with KPIs and storytelling

Course Outline

❖ **Topic 1: Introduction of Gen AI, and Python**
- Data science and analytics fundamentals; analytical workflow
- Use Gen AI for Python prompt engineering
- Tech stack overview: Python and Power BI data sources
- Data wrangling and cleaning principles; reproducibility and ethics
- Operational, service and financial data characteristics: time series, panel data, seasonality, volatility, outliers
- Common techniques: EDA, feature engineering, basic forecasting, KPI definition

❖ **Topic 2: Python for Operational, service and financial Data Analytics**

❖ **2.1 Environment and Python basics**
- Python platform, notebooks, package management
- Syntax essentials: data types, operators, conditionals, loops, exceptions

❖ **2.2 Core libraries and data wrangling**
- Pandas, NumPy, SciPy overview
- Importing data (CSV/Excel/SQL/APIs)
- Cleaning pipelines: missing values, type casting, outlier handling, joins/merges, reshaping
- Time series handling: datetime, resampling, rolling windows

❖ **2.3 Visualization and EDA**
- Matplotlib, Seaborn libraries
- Operational, service and financial plots: line charts, candlesticks, returns distributions, correlation heatmaps
- Styling for clarity; annotations; subplot layouts

❖ **2.4 Data acquisition for finance**
- Web/data sourcing: yfinance, pandas overview
- Rate limits, caching, and data quality checks

❖ **2.5 Operational, service and financial analytics and simple models**
- Return calculations, risk metrics (volatility, Sharpe), factor-style features
- Basic forecasting/baselines (moving averages, simple regressions)
- Model evaluation and leakage awareness

❖ **Topic 3: Data preparation in Power BI**

❖ **3.1 Getting started**
- Power BI role in BI; interface tour; connecting to Excel/CSV and live sources

❖ **3.2 Data preparation in Power BI**
- Data cleansing and wrangling in Power BI Desktop

❖ **3.3 Building visuals and dashboards**
- Charts for finance: time series, dual-axis, waterfalls, KPIs with parameters
- Interactivity: filters, actions, tooltips; design for mobile

❖ **3.4 Advanced analytics and publishing**
- Level of detail (LOD) expressions; table calcs; forecasting and clustering overview
- Performance tips; publishing, permissions, and versioning

❖ **Topic 4: Mini-project**
- Acquire an operational, service and financial dataset (e.g., equities, sales-marketing or time-series)
- Clean, explore, and compute core metrics in Python
- Build a Python visualization and a Power BI dashboard
- Present insights, KPIs, and recommendations

Trainer Information

Dr Patrick TSOI, he is a trainer with over 28 years hands-on data science, Big Data and programming experiences. He is a Doctor of Education graduate from the Hong Kong Baptist University, Master in IT Education graduate from the University of Hong Kong and B.Eng in System Engineering and Engineering Management from the Chinese University of Hong Kong.

Award of Certificate of Accomplishment

Participant with full attendance of class will be awarded a Certificate of Accomplishment issued by the Hong Kong Productivity Council.

Enrolment Methods

1. Scan the QR code to complete the enrolment and payment online OR
2. Mail the crossed cheque with payee name "Hong Kong Productivity Council" (in HK dollar) to HKPC Academy, Hong Kong Productivity Council, 4/F, HKPC Building, 78 Tat Chee Avenue, Kowloon (attention to Ms Yan Wai). Please indicate the course name and course code on the envelope.

Enrolment Link

Supporting Organisations (In arbitrary order)

HONG KONG COMPUTER SOCIETY 香港電腦學會

WTIA 香港無線科技商會

Hong Kong Software Industry Association 香港軟件行業協會

Inquiry
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