KOENIG SOLUTIONS · COURSE OUTLINE

Business Intelligence and Data Mining with Power BI

Learn to apply statistical data mining and Power BI techniques to clean, analyse and visualise data for business insights.

5 Days	6	18
DURATION	MODULES	TOPICS

COURSE OVERVIEW

This course covers the fundamentals of statistical data mining, including its significance and key terminology, followed by data cleaning, pre-processing, transformation and normalisation using Power BI. It then addresses exploratory data analysis through descriptive statistics and visualisation techniques such as histograms, box plots and heatmaps. The course proceeds to core data mining techniques, including classification, clustering, association rule mining and anomaly detection, alongside tools such as R, Python and SAS. It concludes with case studies and real-world applications across industries such as finance, maritime transport and marketing.

WHO THIS COURSE IS FOR

- **Data Analysts**
- **Business Intelligence Analysts**
- **Data Scientists**
- **Statisticians**
- **Data Engineers**

LEARNING OBJECTIVES

- Explain data mining concepts and their significance in industries
- Describe differences between data mining and data processing
- Apply data cleaning and pre-processing techniques in Power BI
- Perform data transformation and normalisation using Power BI
- Analyse data using descriptive statistics and visualisation techniques
- Identify patterns and relationships within large datasets
- Apply classification, clustering and association rule mining techniques
- Evaluate case studies to derive best practices across industries

COURSE SYLLABUS

6 Modules, 18 Topics

01

Introduction to Statistical Data Mining and Processing

TOPICS

- Overview of data mining and its significance in modern industries
- Fundamental concepts and terminologies
- Differences between data mining and data processing

02

Statistics in Business Intelligence

TOPICS

- Data cleaning and pre-processing techniques using Power BI Software
- Handling missing data, outliers and noise using Power BI software
- Data transformation and normalization using Power BI software

03

Exploratory Data Analysis (EDA) for Big Data Using Power BI Software

TOPICS

- Descriptive statistics (mean, median, mode, variance and standard deviation)
- Data visualization techniques (histograms, box plots, scatter plots and heatmaps)
- Identifying patterns and relationships in the data

04

Data Mining Techniques

TOPICS

- Classification (decision trees, random forests, support vector machines and k-nearest neighbors)
- Clustering (k-means, hierarchical clustering and DBSCAN)
- Association rule mining (Apriori and FP-Growth algorithms)
- Anomaly detection techniques

05

Tools and Software for Data Mining

TOPICS

- Introduction to popular data mining tools (R, Python (with libraries like pandas, NumPy, SciPy, scikit-learn) and SAS)
- Hands-on sessions and practical examples using these tools

06

Case Studies and Real-World Applications

TOPICS

- Analyzing case studies from various industries (e.g., finance, Maritime Transport, marketing)
- Practical applications of statistical data mining and processing
- Lessons learned and best practices

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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