

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Data Analysis Techniques for Engineers & Technologists

Code	City	hotel	Start	End	price	Language - Hours
DAI-360SA	Abha	Hotel Meeting Room	2027-03-28	2027-04-01	10450 SR	En - 25

Introduction

In today`s competitive corporate environment, organizations strive for continuous improvement in workplace efficiency while reducing operational, maintenance, support service, and administrative costs. This drives managers, analysts, and decision-makers to achieve increasingly ambitious performance targets.

To make informed decisions that enhance business performance, it is essential to rely on precise data analysis and interpretation. This course equips participants with the skills to convert raw data into actionable insights, enabling them to make data-driven decisions with confidence.

Objectives

This training program is designed to provide participants with the necessary knowledge and practical skills to analyze data effectively and present results in a clear and communicable manner within their organizations.

By the end of the course, participants will be able to:

- Gain a thorough understanding and hands-on experience with fundamental data analysis techniques and data visualization methods.
- Identify the most suitable analytical approaches for different business challenges.
- Develop the ability to assess the validity of applied techniques and recognize potential pitfalls in data interpretation.
- Build a strong analytical vocabulary to engage effectively with data analysts,

statisticians, and probability experts.
- Understand key statistical concepts and methods essential for data-driven decision-making.
- Utilize Microsoft Excel's Data Analysis Tool Pack and built-in functions to enhance data-driven strategies.

Training Methodology

The course follows a practical and application-driven approach, focusing on real-world business scenarios rather than complex mathematical theories. Participants will engage in hands-on exercises using Microsoft Excel to analyze diverse datasets from technical and non-technical domains. The focus will be on practical problem-solving, ensuring participants can apply their learnings directly in their work environments.

Organizational Impact

Organizations that foster a data-driven culture gain a competitive edge in the global marketplace. By empowering employees with advanced data analysis skills, businesses can:

- Improve decision-making efficiency and accuracy.
- Optimize operational performance based on objective data insights.
- Strengthen strategic planning through enhanced analytical capabilities.
- Foster a culture of continuous improvement and innovation.

Personal Impact

Participants will gain:

- Practical expertise in data analysis and visualization techniques applicable to diverse business challenges.
- The ability to select the right analytical approach for different scenarios.
- The confidence to interpret data accurately and avoid misleading conclusions.

- A deeper understanding of statistical methods essential for business intelligence.
- Proficiency in using Excel`s analytical tools for performance monitoring, forecasting, and decision-making.

Who Should Attend?

This course is ideal for professionals who deal with data collection, processing, analysis, and interpretation in their roles. It is particularly beneficial for:

- Business analysts and strategists
- Financial and operations managers
- Engineers and technical professionals
- HR professionals dealing with workforce analytics
- Marketing and sales analysts
- Anyone responsible for performance monitoring and decision-making

Course Outline

Introduction to Data Analysis

- The role of data analysis in modern business.
- Understanding different types of data.
- Challenges in data acquisition and common pitfalls.

Data Visualization and Interpretation

- Creating and interpreting bar charts, Pareto charts, and location charts.
- Summarizing data using descriptive statistics:
  - Mean, median, mode, percentiles, quartiles.
  - Measures of dispersion: range, variance, and standard deviation.

Understanding Data Variation

- Box plots, histograms, and check sheets for data interpretation.
- The normal distribution and its significance in business analytics.
- Introduction to Six Sigma principles and the z-score.

Process Performance Monitoring & Control

- Identifying sources of variation in processes.
- Differentiating between common and special causes of variation.
- Statistical process control (SPC) techniques:
  - Control charts and their applications in business.
  - Predicting future performance using trend analysis.

Common Data Distributions and Applications

- Poisson and binomial distributions and their relevance in business operations.
- Probability distributions for time-based event analysis.

Analyzing Relationships Between Variables

- Scatter diagrams and their role in identifying trends.
- Correlation analysis and interpretation of correlation coefficients.
- Linear regression analysis for trend forecasting.
- Advanced regression models for complex business challenges.

Process Capability and Specification Compliance

- Evaluating whether a process meets industry standards.
- Calculating process capability indices (Cp, Cpk).

Statistical Estimation and Confidence Intervals

- Point estimates for averages and standard deviations.
- Constructing and interpreting confidence intervals.

Hypothesis Testing for Business Decision-Making

- Introduction to hypothesis testing models.
- Applying ANOVA, t-tests, F-tests, and Chi-square tests.
- Using contingency tables for categorical data analysis.
- Testing non-normal data distributions with Chi-square applications.

Practical Excel Applications for Data Analysis

- Exploring the Excel Data Analysis Tool Pack.
- Implementing Excel functions for statistical calculations.
- Conducting real-world case studies and scenario-based workshops.

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

Our Success Partners

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