

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: Advanced AI & Big Data for Supply Chain Optimization

Code	City	hotel	Start	End	price	Language - Hours
SC-924SA	Abha	Hotel Meeting Room	2026-11-29	2026-12-17	19450 SR	En - 50

Introduction

As global supply chains grow more complex and data-driven, organizations must embrace advanced analytics and artificial intelligence to remain competitive. This Advanced Program in Big Data Analytics and Artificial Intelligence for Supply Chain Optimization equips professionals with cutting-edge tools and practical skills to harness the power of data and AI in transforming supply chain planning, execution, and decision-making.

Participants will explore real-world applications of predictive analytics, machine learning, automation, and AI-driven forecasting to improve efficiency, reduce costs, mitigate risks, and drive strategic value. The program combines technical know-how with strategic insights, offering a future-ready skillset for modern supply chain leaders.

General Objective

To empower supply chain professionals with advanced capabilities in data analytics and artificial intelligence, enabling them to optimize performance, enhance decision-making, and drive digital transformation across the supply chain.

Course Objectives

- Understand the role of Big Data and AI in modern supply chains
- Use advanced analytics to improve forecasting, planning, and sourcing
- Apply machine learning models to optimize logistics and inventory

- Automate supply chain decisions through AI-driven platforms
- Analyze risk and disruption using real-time data and predictive tools
- Integrate AI with ERP and SCM systems
- Design data-driven strategies for supplier performance and customer service
- Develop KPIs and dashboards using data visualization tools
- Align AI and analytics with sustainability and resilience goals
- Lead AI adoption and digital transformation in supply chain operations

Targeted Competencies

- Big data collection and interpretation
- Predictive and prescriptive analytics
- AI modeling in logistics and procurement
- Machine learning for inventory and demand
- Supply chain simulation and automation
- Data governance and integration
- Risk analytics and scenario planning
- Performance measurement with digital tools
- AI ethics and responsible implementation
- Change leadership in digital transformation

Targeted Groups

- Supply chain managers and analysts
- Logistics, planning, and procurement professionals
- Data analysts and operations planners
- Digital transformation and innovation teams
- IT professionals working with SCM systems
- Business leaders looking to leverage AI in supply chain strategy

Course Content

Day 1: Foundations of Big Data and AI in Supply Chain

- Understanding Big Data vs. traditional data
- Core concepts in AI and Machine Learning
- Overview of data science in supply chain applications
- Key technologies: IoT, cloud, edge computing
- Use cases across procurement, logistics, and planning

Day 2: Data Sources and Supply Chain Data Architecture

- Identifying internal and external data sources
- Structured vs. unstructured supply chain data
- Building a data pipeline: collection, cleaning, integration
- Data lakes, warehouses, and governance
- Introduction to supply chain databases and APIs

Day 3: Predictive Analytics and Demand Forecasting

- Time-series forecasting models (ARIMA, Prophet, LSTM)
- Using AI to detect demand patterns and anomalies
- Sales, weather, and social media data integration
- Improving forecast accuracy with machine learning
- Collaborative forecasting with suppliers and partners

Day 4: AI in Inventory and Warehouse Optimization

- AI-driven inventory classification and control
- Reorder point optimization with machine learning
- Warehouse automation with robotics and computer vision
- IoT-enabled tracking and smart storage systems
- Simulation modeling for warehouse flow

Day 5: Transportation and Logistics Intelligence

- AI in route optimization and dynamic scheduling
- Real-time tracking using GPS, RFID, and IoT
- Predictive maintenance for fleet and equipment
- AI tools for shipment visibility and exception alerts
- Autonomous and drone-based delivery systems

Day 6: Supplier Analytics and Procurement Intelligence

- Big data in supplier evaluation and segmentation
- AI tools for sourcing decisions and cost modeling
- Predictive analysis for supplier risk and reliability
- NLP in analyzing contracts and supplier communications
- Smart procurement platforms and e-RFQ automation

Day 7: Risk Analytics and Disruption Response

- Identifying and categorizing supply chain risks
- Using AI for scenario planning and impact assessment
- Disruption forecasting using global data signals
- Real-time alert systems for supply chain resilience
- AI in supply chain continuity planning

Day 8: Building Dashboards and Performance Models

- Key supply chain KPIs in the digital era
- Data visualization tools (Power BI, Tableau)
- Creating interactive dashboards for real-time insights
- Using data for operational and strategic decisions
- Data storytelling for supply chain reporting

Day 9: Integration with ERP and SCM Systems

- Connecting AI platforms with existing ERP/WMS/TMS
- Role of APIs and middleware
- Digital twins and supply chain simulation
- AI integration challenges and best practices
- Enterprise case studies

Day 10: Leading Digital Transformation in Supply Chain

- Developing a roadmap for AI adoption
- Change management for digital initiatives
- Ethics, bias, and responsible AI use
- Future trends: autonomous supply chains, GenAI
- Capstone project: present a data-driven supply chain solution

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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