



SCANDINAVIAN ACADEMY
For Training and Development



Course: Decision Analysis for Operation & Maintenance Professionals

Code	City	Hotel	Start	End	Price	Language - Hours
MA-527	Muscat (Oman)	Hotel Meeting Room	2026-03-29	2026-04-02	3950 €	En - 25

Introduction

Efficient decision-making in operations and maintenance (O&M) is critical for optimizing resources, reducing downtime, and ensuring the longevity of assets. This course is designed to equip O&M professionals with structured decision analysis techniques to enhance reliability, minimize costs, and improve overall operational efficiency.

Course Objectives

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

- Understand the principles of decision analysis in operations and maintenance.
- Apply structured decision-making processes to solve O&M challenges.
- Utilize risk assessment and reliability-centered decision techniques.
- Implement cost-benefit and lifecycle analysis for asset management.
- Leverage data-driven decision models for predictive and preventive maintenance.
- Enhance problem-solving skills using real-world case studies and simulations.

Target Audience

- Operations and maintenance managers
- Reliability engineers
- Asset management professionals



- Maintenance planners and supervisors
- Facility managers
- Professionals involved in optimizing operational efficiency and decision-making

Training Methodology

- Interactive lectures and discussions
- Case studies from real-world O&M scenarios
- Practical exercises using decision analysis tools
- Group problem-solving sessions

Course Outline

Module 1: Introduction to Decision Analysis in O&M

- The importance of structured decision-making in operations and maintenance.
- Key challenges in O&M decision-making.
- Decision analysis frameworks and methodologies.

Module 2: Data-Driven Decision Making

- Importance of data collection and analysis.
- Identifying key performance indicators (KPIs) for O&M.
- Tools for data visualization and reporting.

Module 3: Risk-Based Decision Making

- Understanding and assessing risks in O&M.
- Failure Mode and Effects Analysis (FMEA).
- Reliability-Centered Maintenance (RCM) approach.
- Risk mitigation strategies.



Module 4: Cost-Benefit and Lifecycle Analysis

- Evaluating the total cost of ownership (TCO).
- Conducting cost-benefit analysis for maintenance strategies.
- Asset lifecycle management and optimization.
- Case study: Lifecycle cost analysis of critical equipment.

Module 5: Decision-Making Models for Maintenance Strategies

- Predictive vs. preventive vs. reactive maintenance strategies.
- Using decision trees and multi-criteria decision analysis (MCDA).
- Optimization techniques for maintenance planning.

Module 6: Implementing Reliability and Performance Metrics

- Key reliability metrics (MTBF, MTTR, Availability, OEE).
- Using statistical analysis for reliability assessments.
- Condition-based monitoring (CBM) and predictive analytics.

Module 7: Practical Applications and Case Studies

- Industry case studies on decision-making in O&M.
- Hands-on group exercises in decision modeling.
- Simulation-based learning for optimizing maintenance decisions.



The Scandinavian Academy for Training and Development 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 and Development.

Program Timings:

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.