



## Decision Analysis for Operation and Maintenance Professionals

3 - 14 Feb 2020  
Netherlands (Amsterdam)





# Decision Analysis for Operation and Maintenance Professionals

**Ref.:** O1043\_98635 **Date:** 3 - 14 Feb 2020 **Location:** Netherlands (Amsterdam) - **Fees:** 6750 Euro

## Introduction:

This program examines lean thinking and techniques for decision analysis with emphasis on the lean approach and responsiveness to the customer requirements. Decision-making is the most central human activity, intrinsic in our biology, and done both consciously and unconsciously. We need it to survive. Taking a decision is not just a question of selecting the best alternative. Often one needs to prioritize all the alternatives for resource allocation among a portfolio of option, or to examine the effect of changes introduced to initial judgments

## Targeted Groups:

- Operation Professionals
- Maintenance Professionals
- Reliability Professionals
- Key Operations Supervisors
- Internal Improvement Consultants

## Course Objectives:

At the end of this course the participants will be able to:

- Improve productivity through the use of better, timelier information.
- Understand how world-class organizations solve common asset management problems.
- Optimize planning and scheduling resources.
- Carry out optimized failure analyses.
- Optimize asset management budgets by the avoidance of unplanned equipment failures in service.
- Develop a practical approach of an action plan to utilize these technologies in their areas of responsibility, fitting them into the overall strategy, and measuring benefits.

## Targeted Competencies:

- Breaking a problem down into its constituent parts or components, in the framework of a hierarchy
- Establishing importance or priority to rank the alternatives is a comprehensive & general way to look at the problem in a formal manner
- Application of Multi-Criteria Decision-Making MCDM to practical problems
- Introduction to different operational research & management science methods
- Enhance decision-making with goals and criteria & show how to measure and rank them



## **Course Content:**

### **Unit 1: Introduction to Decision Making:**

- Scope and significance of Decisions
- The Decision Making Process
- Choosing Between Options by Projecting Likely Outcomes
- Decision Tree Analysis: decision models; low probability, high-consequence events; valuing additional information and control
- Monte Carlo Simulation: optimization; advantages and limitations

### **Unit 2: Implementing Multiple Criteria Decision Analysis:**

- Definition of Decision Analysis
- How, and Why, Bad Decisions are Made
- Problems with Traditional Methods
- Guidelines for Good Decision Analysis

### **Unit 3: The Analytic Hierarchy Process AHP**

- What is AHP?
- The Comparative Matrix
- Consistency Analysis
- Sensitivity Analysis
- Benefit/Cost Analysis
- Resources Allocation
- Applications of the AHP The Concorde Case, Maintenance Strategy, Highway planning

### **Unit 4: Risk Management through Failure Mode & Effect Analysis FMEA**

- Risk Mitigation
- Fault Tree analysis
- Risk Priority Number
- The Criticality Matrix
- Equipment Criticality Grading
- Cases from Oil and Gas Industry and others
- Modelling Reliability of Systems
- Series and Parallel Systems
- The Redundancy Concept
- Types of Redundancy
- When to Use Redundancy



## **Unit 5: MRP and ERP Systems:**

- What is ERP and how did it develop
- What is MRP System
- What is MRPII System
- Planning and Control
- The Bill of Materials
- Master Production Schedule
- Scope of Decisions

## **Unit 6: Optimum Performance Measure:**

- Challenges of Performance Measures
- Performance Measures as a Continuous Improvement Process
- Desirable Features in Maintenance Performance Measures
- Best and Worst Practices in Performance Measures

## **Unit 7: The Overall Equipment Effectiveness as a Source of Best Practice in Maintenance:**

- Advantages of OEE as an Improvement Programme
- Lean Maintenance through the Use of OEE
- Analysis of the Six-Big Losses

## **Unit 8: The House of Quality:**

- Basics of design evaluation
- How to convert the voice of the customer to engineering solutions for a better design
- Apply the concept of House of Quality in practical cases

## **Unit 9: Decision Analysis for Optimisation of Maintenance Activities:**

- How to get the most of your CMMS?
- Benefits that can result from CMMS
- Optimum Decisions for Maintenance Policies
- Unmet needs in Responsive Maintenance
- Key Features of Next Generation Maintenance Systems
- How to transform Data to Decisions



**Registration form on the :  
Decision Analysis for Operation and Maintenance Professionals**

**code:** O1043 **From:** 3 - 14 Feb 2020 **Venue:** Netherlands (Amsterdam) - **Fees:** 6750 **Euro**

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