Global Horizon
TRAINING CENTER

Training Course:
Decision Analysis for Operation and Maintenance Professionals

6 - 17 October 2025
Kuala Lumpur (Malaysia)
Royale Chulan Kuala Lumpur

Training Course:
Decision Analysis for Operation and Maintenance Professionals

Training Course code: MI1043 From: 6 - 17 October 2025 Venue: Kuala Lumpur (Malaysia) - Royale Chulan Kuala Lumpur
Training Course Fees: 9800 Euro

Introduction

This program examines lean thinking and techniques for decision analysis with emphasize 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.

Breaking a problem down into its constituent parts or components, in the framework of a hierarchy, and establishing importance or priority to rank the alternatives is a comprehensive and general way to look at the problem in a formal manner. This kind of concern has been loosely called multi-criteria decision-making MCDM. In operational research and management science today, decision-making is essentially thought of in the focused area of research concerned with goals and criteria and how to measure and rank them.

In our complex world, there are usually many solutions proposed for each problem. Each of them would entail certain outcomes that are more or less desirable, more or less certain, in the short or long term, and would require different amounts and kinds of resources. We need to set priorities on these solutions according to their effectiveness by considering their benefits, costs, risks, and opportunities, and the resources they need.

Course Objectives

- Improve productivity through 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 own areas of responsibility, fitting them into the overall strategy, and measuring benefits.

Course Benefits

- Accomplish strategic change in the organization in a more productive manner
- Build and maintain effective and efficient procedures in the organization
- Complete work tasks on time and on budget

- Develop skills in managers which will raise the capability, skill and morale of colleagues
- Improved operating performance in completion of assignments
- Acquire useful work task management skills
- Develop skills in problem-solving and decision making
- Develop interpretation skills of analytics to support decision making
- Gives you a proper knowledge of the basic principles of operations management
- Helps you in planning and developing a future career
- Identify the Key Performance Indicators within your management area
- Know how to compare alternatives to support decision making
- Learn how to apply best practices
- Learn from the experience of other delegates and the trainer
- Learn management techniques to plan, establish priorities and set and maintain deadlines

Course Outlines

Day 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
- Case Studies and Group Exercises

Day 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

Day 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
- Case Studies and Group Exercises

Day 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

Day 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
- Case Studies and Group Exercises

Day 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

Day 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
- Case Studies and Group Exercises

Day 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

Day 9& 10: 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
- Examples of Approaches and Case Studies

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

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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