



ME175

Decision Analysis for Operation and Maintenance Professionals

Course Introduction:

This course examines techniques for decision analysis with emphasis on prioritization and the decision making process to be carried out by Operation & Maintenance Professionals. 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. 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.

This course will feature:

- 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 Objectives:

Upon successful completion of this course, the delegates will be able to:

- 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 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

Who Should Attend?

This course is suitable to a wide range of technical professionals but will greatly benefit to operation and maintenance professionals, key operations supervisors and internal improvement consultants.

Course Outline:

Day 1:

Introduction to Decision Making

- Scope and significance of decisions
- The Decision making process
- The concept of best practice through learning from worst practice
- Introduction to reliability and Weibull analysis
- Case Studies and Group Exercises

Day 2:

Implementing Multiple Criteria Decision Analysis using the Analytic Hierarchy Process (AHP)

- Definition of Decision Analysis
- How, and Why, Bad Decisions are Made
- Guidelines for Good Decision Analysis
- What is AHP?
- Benefit/Cost Analysis
- Resources Allocation

Day 3:

Risk Management through Failure Mode & Effect Analysis (FMEA)

- Fault Tree Analysis
- Risk Priority Number
- The Criticality Matrix
- Modelling Reliability of Systems
- Series and Parallel Systems
- The Redundancy Concept

Day 4:

MRP and ERP Systems

- What is ERP and how did it develop
- What is MRP System
- The Bill of Materials
- Master Production Schedule
- Practical Examples
- Case Studies and Group Exercises

Day 5:

Decision Analysis for Optimization of Maintenance Activities

- How to get the most of your CMMS?
- Benefits that can result from CMMS
- Optimum Decisions for Maintenance Policies
- Key Features of Next Generation Maintenance Systems
- How to transform Data to Decisions
- Examples of Approaches and Case Studies

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

