

# € TRAINING

Advanced Environmental Monitoring and  
Modelling



# Advanced Environmental Monitoring and Modelling

## Introduction:

This course Environmental Monitoring and Modelling training course is designed to allow participants with the applicable skills and knowledge to evaluate and report on the conformance of an environmental management system and effectively implement an environmental management system. It provides the knowledge to develop, manage, and monitor Environmental Management Systems EMS suitable to the needs of their organization focusing on environmental risks, activities, characteristics, and impacts.

This training course aims to present to the participants the idea, methodology, and essential tools of environmental modeling. Nowadays, Models are imperative tools in environmental studies and management. To better understand environmental systems, to forecast their behavior, and to develop effective management strategies, it is essential to bring together ecological, socio-economic, and technological aspects of environmental problems.

As concern grows for constantly improving the quality of the environment, organizations of all types and sizes are progressively turning their attention to the environmental effects of their activities, products, and services. The environmental act of an organization is of importance to internal and external concerned parties. Achieving thorough environmental performance requires an organizational commitment to a systematic approach and continual improvement of their environmental performance.

## Course Objectives:

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

- Understand types of environmental aspects and their environmental impacts
- Understand the requirements of newly revised ISO 14001:2018 standard
- Identify all waste stream types and opportunities for reducing costs of waste
- Understand environmental-management system definitions, ideas, and guidelines
- Understand the requirements of the ISO 14001:2018 standard
- Understand the Environmental Management System EMS implementation phases, learn best-practice techniques, examine useful tools, and understand the incorporation of the Environmental Management System EMS with other environmental programs
- Apply environmental-management principles to achieve continual Environmental Management System EMS improvement

## Targeted Audience:

- Production and Process Engineers
- Maintenance Engineers
- People who are involved in the managing and purchasing of hazardous substances
- Managers, Supervisors, and Consultants who will be part of an Environmental Management Systems Implementation Team
- Anyone involved in the implementation, maintenance or supervising of an ISO 14001

## Course Outlines:

### Unit 1: Introduction to Environmental Management:

- Benefits of Good Environmental Management
- Key Environmental Management System EMS Elements
- Document Framework for an Environmental Management System
- Environmental Management System as a Process Plan / Do / Check / Act
- ISO 14001:2018 Environmental Management System Benefits
- ISO 14001:2018 Requirements
- Understanding Organisation's Activities and Interested Parties

## Unit 2: Environmental modeling - applications:

- Air quality modeling: the box model, the Gaussian plume model point sources, line sources, area sources; special topics; Gaussian puff model
- Water quality modeling: surface water quality modeling
- Climate change modeling Habitat models/ Ecosystem modeling

## Unit 3: Environmental Management Systems / Leadership and Planning:

- Initial Environmental Review IER
- Developing and Communicating an Environmental Policy
- Assigning Organisational Roles, Responsibilities, and Authorities
- Determining the Organisation's Compliance Obligations
- Selecting Risk Control Measures for Managing Significant Impacts
- Setting Environmental Objectives and Programs to Achieve Them

## Unit 4: Environmental Aspects & Impacts:

- Identifying and Analysing Environmental Aspects and Impact Risks
- Understanding Environmental Impacts
- Understanding Global, Regional and Local Environmental Issues
- How to Determine Significant Environmental Aspects
- Analysis of Impacts
- Carrying out an EIA
- Identifying Applicable Regulatory and Standards' Requirements

## Unit 5: Support and Operations:

- Awareness
- Communication
- Documented Information
- Operational Control
- Contractor & Supplier Controls
- Emergency Preparedness and Response

## Unit 6: Performance Evaluation

- Carrying Out an Environmental Audit
- EMS Performance Monitoring, Measurement, Analysis, and Evaluation
- Checking and Evaluation of Compliance Obligations
- Management Review Process
- Summary of Course Key Points and Assessment

## Unit 7: Environmental Management Systems:

- Environmental Policy
- Concepts of the Environmental Standard ISO 14001:2004
- Initial Environmental Review IER
- What are Environmental Aspects and Impacts?
- Environmental Disasters
- Producing an EMS Document Framework

## Unit 8: Environmental Aspects & Impacts:

- Understanding Environmental Impacts
- Understanding Global, Regional and Local Environmental Issues
- How to Determine Significant Environmental Aspects?
- Identifying Applicable Regulatory and Standards Requirements
- Preparing an Environmental Impact Assessment Checklist

## Unit 9: Environmental Impact Assessment EIA:

- Elements of the EIA Process
- Carrying out an EIA
- Analysis of Impacts
- Environmental Disaster
- List the Steps of an EIA Process

## Unit 10: Internal Environmental Auditing:

- Carrying Out an Environmental Audit
- Management Review Process
- Checking and Evaluation of Compliance Obligations
- EMS Performance Monitoring, Measurement, Analysis and Evaluation