



**Health, Safety  
Security & Environment**



**SCANDINAVIAN ACADEMY**  
Training and Development



# Course: Advanced Process HAZOP

Code	City	hotel	Start	End	price	Hours
198	Copenhagen (Denmark)	Hotel Meeting Room	2024-07-08	2024-07-12	5450 €	25

## Introduction

It is universally recognised that for any Company to succeed it must take a proactive approach to risk management. Over the last few years Companies and a number of Countries legislators have been focusing on Process Safety as a method to reduce the risks posed by hazardous industries. Process Hazard Analysis (PHA) is recognised as being a critical tool in the implementation of a successful risk management system.

As Hazard and Operability (HAZOP) studies are now recognised world-wide as being the qualitative risk assessment methodology of choice in the Process Industries, there will be additional focus on this specific aspect of Process Hazard Analysis.

### In this programme the delegates will learn:

- How to apply advanced risk assessment techniques
- Mechanics of dispersion, fire, explosion and toxic releases
- The concept of Quantified Risk Assessment "QRA"
- Hazard and Operability (HAZOP) study methodology
- HAZOP team leadership

## Objectives

### Delegates attending this programme will:

- Understand the concepts of Risk Assessment and Risk Management
- Understand the estimation and evaluation of risks - Qualitative, Semi-Quantitative and Quantified Risks
- Techniques for Hazard Identification and Analysis - Check-Lists, Risk Profiling, HAZOP, FMEA and Task-Based Risk Assessment
- Cause-Consequences Analysis - The Role of Fault Trees and Event Trees in Accident Prevention
- Understand HAZOP studies their benefits and their short comings
- Understand the requirements of a Team Leader or Facilitator, scribe and team members during HAZOP studies
- Be able to facilitate a HAZOP study

## Training Methodology



Participants will learn by taking part in exercises, syndicate and group workshops, as well as looking at case studies and real life situations.

## **Organisational Impact**

In addition to the professional development of staff, the organisation should be able to prioritise resources to demonstrate that process risks are adequately controlled

## **Personal Impact**

Attendees will be able to apply skills learnt from this training at a practical level to identify sources of major hazards and to prioritise decisions for their control

## **SEMINAR OUTLINE**

### **DAY 1**

#### **Introduction to Risk Assessment**

- Course introduction: delegate and tutor introductions; course objectives
- The concepts of hazards, risk and risk assessment
- Methods for risk evaluation
- Integrating risk assessment within Risk Management
- Qualitative, Semi-Quantitative and Quantitative Risk Assessment methodologies
- Feedback and review of Day 1

### **DAY 2**

#### **Risk Assessment Techniques: HAZOP**

- Introduction to hazards identification and analysis techniques
- Techniques for hazard identification and analysis - HAZOP
- Where and when to use HAZOP and the requirements for a successful HAZOP study
- Team composition for HAZOP studies
- Guide words and process variables used for HAZOP studies
- Syndicate exercise - application of HAZOP to relevant processes
- Report back and review of Day 2



## **DAY 3**

### **Hazop Leadership Techniques**

- HAZOP team leader/facilitator requirements
- HAZOP scribe requirements
- Facilitating HAZOP studies, do's and don'ts
- Information required to allow successful HAZOP studies
- Case study where each delegate has the opportunity to facilitate a HAZOP meeting
- Review of commercial software used for HAZOP and Management of Change 'MOC'
- Report back and review of Day 3

## **DAY 4**

### **Consequence Analysis**

- Theory behind fire, explosion and toxic dispersion modelling utilised in Quantitative Risk Assessments
- Types of fires and their effects on people and equipment
- Types of explosions and their effects on people and equipment
- Review of software available for consequence calculations
- Report back and review of Day 4

## **DAY 5**

### **The Role of QRA**

- Introduction to Quantified Risk Assessment "QRA"
- The role of Event Tree Analysis in scenario development
- The role of Fault Tree Analysis for multi-causation analysis
- Applications for ETA and FTA
- Failure data for use in QRA's
- Societal Risk and Individual Risk
- Review of software available for Quantitative Risk Assessments
- Report back on day 5 and discussion
- Programme review and the way ahead



**The Scandinavian Academy employs modern methods in training and skills development, enhancing the efficiency of human resource development. We follow these practices:**

- **Theoretical Lectures:**
  - We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.
- **Scientific Assessment:**
  - We evaluate trainees skills before and after the course to ensure their progress.
- **Brainstorming and Interaction:**
  - We encourage active participation through brainstorming sessions and applying concepts through role play.
- **Practical Cases:**
  - We provide practical cases that align with the scientific content and the participants specific needs.
- **Examinations:**
  - Tests are conducted at the end of the program to assess knowledge retention.
- **Educational Materials:**
  - We provide both printed and digital scientific and practical materials to participants.
- **Attendance and Final Result Reports:**
  - We prepare detailed attendance reports for participants and offer a comprehensive program evaluation.
- **Professionals and Experts:**
  - The programs scientific content is prepared by the best professors and trainers in various fields.
- **Professional Completion Certificate:**
  - Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.
- **Program Timings:**
  - Training programs are held from 10:00 AM to 2:00 PM and include buffet sessions for light meals during lectures.