



**SCANDINAVIAN ACADEMY**  
For Training and Development

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# Course: Advanced Occupational Safety and Process Risk Analysis (OSHA & HAZOP)

| Code   | City                  | Hotel              | Start      | End        | Price  | Language - Hours |
|--------|-----------------------|--------------------|------------|------------|--------|------------------|
| HS-904 | Singapore (Singapore) | Hotel Meeting Room | 2027-02-01 | 2027-02-12 | 9450 € | En - 50          |

## Introduction

With the increasing complexity of industrial operations, occupational safety and risk analysis have become essential pillars for ensuring the protection of personnel, assets, and the environment. This course integrates the foundational principles of OSHA with advanced process hazard analysis techniques such as HAZOP and QRA. It is designed to equip professionals with comprehensive knowledge and practical tools to proactively manage safety and prevent incidents in high-risk industries.

## General Objective

To enable participants to understand and apply occupational safety systems and advanced operational risk analysis methods to reduce incidents and maintain a safe and efficient working environment.

## Specific Objectives

**By the end of this program, participants will be able to:**

- Understand the basic principles of occupational safety based on OSHA standards.
- Identify unsafe behaviors and conditions in the workplace.
- Conduct Job Safety Analysis (JSA) and prepare incident investigation reports.
- Lead accident investigation processes and determine root causes.
- Apply first aid and cardiopulmonary resuscitation (CPR) techniques.



- Understand risk assessment methodologies: qualitative, semi-quantitative, and quantitative.
- Apply HAZOP methodology for hazard identification and analysis.
- Facilitate HAZOP sessions and manage team dynamics effectively.
- Analyze potential consequences of industrial incidents such as fire, explosions, and toxic releases.
- Utilize event and fault tree analysis tools in Quantified Risk Assessments (QRA).

## Target Audience

- Safety, Health, and Environment (SHE) managers and supervisors
- Process and operations engineers
- Risk management and quality assurance professionals
- HAZOP team members and safety analysts
- Staff working in oil, gas, chemical, and heavy industries

## Course Outline

### Day 1: Fundamentals of Occupational Safety and Health

- Definitions: safety, accidents, occupational health
- Introduction to WHO and OSHA standards
- Threshold Limit Values (TLVs)
- The role of safety culture in industrial environments

### Day 2: Emergency Response and Accident Behavior

- Types and sources of workplace accidents
- Emergency behavior and protocols
- First aid and CPR techniques
- Effective communication during emergencies



### **Day 3: Job Safety Analysis (JSA)**

- Purpose and benefits of JSA
- Step-by-step procedure for job analysis
- Risk identification through task breakdown
- Documenting and communicating safety instructions

### **Day 4: Incident Investigation and Reporting**

- Accident causation theories
- Root cause analysis techniques
- Incident documentation and reporting standards
- Preventive and corrective actions

### **Day 5: Safety Management Systems**

- Planning and organizing safety programs
- Leadership and control in safety systems
- Developing institutional safety plans
- Importance and execution of safety audits

### **Day 6: Introduction to Risk Assessment**

- Risk vs. hazard: definitions and concepts
- Qualitative, semi-quantitative, and quantitative approaches
- Integrating risk assessment in safety systems
- Introduction to HAZOP as a risk identification tool

### **Day 7: HAZOP Methodology and Applications**

- When and why to apply HAZOP
- Team composition and responsibilities
- Guide words and process parameters



- Case studies and real-life applications

## **Day 8: HAZOP Leadership and Facilitation**

- Role of the HAZOP leader and scribe
- Effective facilitation techniques
- Conducting structured HAZOP meetings
- Practical HAZOP session (simulated exercise)

## **Day 9: Consequence Analysis**

- Theories of fire, explosion, and toxic dispersion
- Effects on personnel and equipment
- Introduction to consequence modeling software
- Group exercise: incident scenario evaluation

## **Day 10: Quantitative Risk Assessment (QRA)**

- Principles of QRA and its significance
- Event Tree and Fault Tree Analysis
- Failure data and risk estimation
- Societal vs. individual risk evaluation
- Course summary and final review



The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant will receive comprehensive training materials, including theoretical content, practical exercises, and supporting resources, provided in both printed and digital formats. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

### **Program Timings:**

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

### **The program includes:**

- A daily Coffee Break provided during the sessions to ensure participants comfort.