



# HSE114

## Safety and Risk Management in Onshore Operation and Prediction

## Course Introduction:

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In oil and gas industry, plant operation involves long hours, large equipments and sometime hazardous materials. Major hazard incidents which involve the release of hazardous process material from plants have the potential to kill people and also damage the environment. This course intends to highlight methods of identifying, analyzing and quantifying these hazards or risks and suggests ways to avoid or at least, minimize them. The task of making Safety works involves the right approach and attitude from top level management to lower level operators. Therefore this course hopefully will be beneficial to all who attends. This course provides an integrated approach to managing a process and human to achieve maximum safety at work. The techniques for analyzing the risk are simple and practical. Above all, the solutions offered cover a wide range of practical schemes to achieve maximum safety with values for money.

## Course Objectives:

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

- Recognize safety, health and environmental regulations
- Understand the concept of safety and risk in oil & gas industry
- Carryout Quantitative Risk Assessment (QRA)
- Use Hazard Identification methods such as Mond Index, Concept Hazard Analysis, Preliminary Hazard Analysis (PHA) and Hazard and Operability Studies (HAZOP)
- Use Hazard Analysis method such as Fault Tree and Event Tree Analysis

## Who Should Attend?

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This course is intended for process designers, chemical engineers, technologists, chemists, scientists, managers, rig technicians and plant operators

## Course Outline:

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### Day 1:

#### Pre-Test

#### Module 1 - Major Hazards & Legislations

- Source of Major Hazards - Fire, Explosion and Toxic Releases
- Major Hazards, Health, Safety and Environmental Legislation
- Safety and Management Audits
- Attitude in Safety and Psychological Aspects

### Day 2:

## Module 2- Hazard Identification Methods

- Hazard Identification Methods and Incident Scenarios
- Mond Index
- Concept Hazard Analysis(CHA)
- Preliminary Hazard Analysis (PHA)
- Hazard and Operability Studies (HAZOP)
- HAZOP Study Workshop

### Day 3:

## Module 3 - Hazard Analysis Methods

- Hazard Analysis Methods
- Fault Tree and Event Tree Evaluation
- Fault Tree Workshop

### Day 4:

## Module 4 - Risk Assessment and Management

- Introduction to Risk Assessment
- Risk Tolerability Criteria
- Quantitative Risk Assessment
- Risk Assessment Workshop

### Day 5:

## Module 4 - Risk Assessment and Management (cont'd)

- Process and Instrumentation Diagram
- Safety Equipment
- Failure Rates and Risk Estimation

## Post Test

## Course Methodology:

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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 Certificate:

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

## Course Fees:

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**To be advised as per the course location.** This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## Course Timings:

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### 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