



Asia Masters Center

PROCESS SAFETY ENGINEERING



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PROCESS SAFETY ENGINEERING

➔ Course Objective

Upon completion of the course, participants will be able to:

- describe the overall production chain and explain main techniques and equipment used in the Oil & Gas facilities,
- detail process safety elements and purpose,
- describe process safety management roles and responsibilities,
- contribute to process hazard analysis studies, events analysis and investigation reporting and monitoring,
- develop leadership techniques to enhance safety culture in the organization.

➔ Target Audience

- Anyone who needs to work with process safety engineers; this would include facilities engineers, operations and maintenance supervisors, project engineers and managers, entry level process safety engineers, experienced professionals new to oil and gas, and anyone who needs a general understanding of the breadth of the process safety engineering discipline. Technical staff from insurance companies and regulatory agencies have found the course useful.



Course Outline

Day 1

The OIL & GAS FIELD PROCESSING

- Fundamentals of reservoir engineering, drilling, completion and well servicing.
- Fundamentals of thermodynamics applied to effluent processing.
- Crude oil treatment.
- Production water treatment and injection.
- Gas processing and conditioning.
- Overview of static equipment. Piping, valves, thermal and storage equipment.
- Overview of rotating equipment. Pumps, compressors and gas turbines.
- Instrumentation and process control.

Day 2

INTRODUCTION TO PROCESS SAFETY MANAGEMENT

- Fundamentals of process safety. Main standards. Overview of risk based process safety.
- Process safety management system. Documentation controls and applicable tools. Implementation.
- Commitment to Process Safety:
- Workforce involvement and process safety culture.
- Workforce training.
- Human factors in process control.
- Process Safety Information.
- Management of contractors.
- Continuous improvement elements. Audits and inspections. Establishment of objectives and KPI.
- Process safety management in project development.

Day 3

SAFETY ENGINEERING

- Process hazard analysis. HAZID studies, HAZOP studies. Consequence analysis methodology.
- Major hazard assessment and bowtie diagrams analysis.
- Quantitative risk assessment.
- Layers of protection.
- Safety instrumented systems.
- Fire detection and protection systems.

HSE IN SURFACE PRODUCTION OPERATIONS

- Safe isolation of plant and equipment (LOTO, degassing-inerting, ventilation...).
- Risk assessment of operations. Job safety analysis.
- Permit to work system.
- Introduction to operating procedures. Pre-startup safety review.
- Safe work practices. Management of change.
- Downgraded situations.
- Simultaneous operations.
- Environmental impact of production activities.

Day 4

ASSET INTEGRITY

- Introduction to Asset Integrity Management.
- Criticality and risk assessment tools. FMECA, FTA.
- Inspection and test.
- Corrosion.
- Maintenance and inspection based on failure risk.
- Implementation and challenges.

Day 5

EMERGENCY RESPONSE PLANNING

- Introduction to emergency response management.

- Scenario identification and development. Tier definition.
- Definition of resources.

ACCIDENT INVESTIGATION WORKSHOP - ROOT CAUSE ANALYSIS

- Introduction to undesired events reporting and investigation.
- Initiating investigation process. Gathering of information.
- Analysis of information. Root cause analysis.
- Identification of risk control measure and definition of action plan.
- *Case study.*

➤ The Feature Of Asia Master Training And Development Center

- we pick up the customer from the airport to the hotel.
- we give the participant training bag includes all the necessary tools for the course.
- Working within groups to achieve the best results.
- All our courses are confirmed and we do not postpone or cancel the courses regardless of the number of participants in the course.
- We can assist you in booking hotels at discounted prices if you wish to book through us.
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➔ **The Cost Of The Training Program Includes The Following:**

- 1) Scientific article on flash memory.
- 2) Training Room.
- 3) Training.
- 4) Coffee break.
- 5) The training bag includes all the tools for the course.
- 6)

Price (USD)
<p>Communicate with the training department to know the participation fees</p> <p>➤ There are offers and discounts for groups</p>
<p><u>The details of the bank account</u></p> <p>Bank name: CIMB Bank Berhad</p> <p>Account name: Asia Masters Center SDN. BHD</p> <p>Bank account number: 80-0733590-5</p> <p>Swift code: CIBBMYKL</p> <p>IBAN: Null</p>