



iFluids[®]
ENGINEERING

Managing Risks , Delivering Value

FREE CERTIFIED TRAINING
COMPREHENSIVE
OVERVIEW ON PROCESS
DESIGN & TECHNICAL
SAFETY STUDIES IN OIL &
GAS INDUSTRY

Overview

iFluids Engineering Supports the Growth and Development of Professionals in the Engineering industry through its training academy. We offer a wide range of hands-on training programs designed to empower individuals to acquire new skills and enhance their Employment prospects. Our training programs cover a wide range of topics, Process Safety Management, Process Hazard Analysis, Safety Integrity Level, and Environmental Studies, & other Safety Studies.

We have conducted over 50+ free training and webinar programs, which has trained over 3054+ individuals. These programs have been designed to cater Participants with an overview of various topics and to provide them with an opportunity to interact with experts in the relevant field.

Objective

The Primary Objective of this training program is to offer Participants outstanding placement opportunities within iFluids Engineering Group & other Engineering Companies. To achieve this, Participants are required to demonstrate a comprehensive understanding of the subject matter and successfully complete the entire training program, which includes daily Assessments.

Upon successful completion of the Training Modules, Participants will develop a solid foundation in Operations, Processes, Safety Protocols, Risk assessment, and Hazard classification that are specific to Oil and Gas industry. This Ample knowledge will empower them to excel in their future roles, making valuable contributions to the Industry.

What will you Learn?

- Overview of Oil & Gas Industry
- Process Design Fundamentals
 - Process Flow Diagram (PFD)
 - Piping and Instrumentation Diagram (P&ID)
- Hazard and Operability Studies (HAZOP)
- Quantitative Risk Analysis (QRA)
- Functional Safety (Safety Integrity Levels (SIL)).
- Hazardous Area Classification (HAC) Training
- Process Safety Management (PSM)
- Soft skills Training
 - Introduction to ChatGPT and Exploring the Use of AI Tools in Oil and Gas Industry
 - Effectively Harness the Power of your Network by using LinkedIn

Target Audience

This Training is Exclusive for all Chemical, Petrochemical & Petroleum Engineers of 2023 Batch.

TRAINING MODULES

Module 1

OVERVIEW OF OIL & GAS INDUSTRY

INTRODUCTION

The Oil and Gas industry plays a crucial role in meeting global energy demands. It involves Exploration, Extraction, Refining, and Transportation of Petroleum products. Understanding the fundamentals of Oil & Gas Industry is essential for professionals working in this field.

OBJECTIVE

The objective of Oil & Gas training is to provide Participants with a comprehensive understanding of the availability and extraction of Crude Oil, Primary and Secondary Processing in Oil Refineries, Processing Methodologies, Properties of Oil & Gas Products, Instrumentation and Process Controls, Operational issues, Safety Considerations, Storage and transportation of Petroleum Products. This training aims to equip Participants with the knowledge and skills necessary to work effectively in Oil & Gas Industry.

TOPICS COVERED

- Introduction to Oil and Gas Industry
- Availability & Extraction
- Crude – Types, Properties & Specifications
- Initial Processing & Transportation
- Oil Refineries – Primary & Secondary Processing
- Processing Methodologies & Objectives
- Unique Features of Processing Units
- Properties of Products & Specifications
- Instrumentation & Process Controls
- Operational issues: Effluents, SD, SU, Emergencies
- Storage & Transportation

Module 2

PROCESS FLOW DIAGRAMS (PFD)

INTRODUCTION

A Process Flow Diagram (PFD) is a visual representation that illustrates the Major components, Flow paths, and Key Process conditions of a system or process. It provides a simplified and structured overview of how Materials, Energy, and Information Flow within a process.

OBJECTIVE

The objective of Process Flow Diagram (PFD) is to provide an visual representation that enables to understand the overall flow and components of a process, Facilitate clear Communication and Collaboration, aid in parameter analysis and troubleshooting, Enhance Safety Awareness, and Develop knowledge and skills in Process Engineering and Manufacturing Industries.

TOPICS COVERED

- PFD Purpose
- PFD Structure
- Technical Details in PFDs
- Control Scheme
- Process Conditions
- How to read and Understand PFDs

PIPING AND INSTRUMENTATION DIAGRAMS (P&IDS)

Module 3

INTRODUCTION

Piping and Instrumentation Diagram (P&IDs) provide an Visual Representation of Process flow, Equipment, and Instrumentation. Understanding P&IDs is essential for freshers to comprehend Process Design, Equipment functionality, and Safety Considerations.

OBJECTIVE

The objectives of Piping and Instrumentation Diagrams (P&IDs) are to understand their Purpose, familiarize with their structure and Sections, Grasp the legends and symbols used, Comprehend the Technical details presented, Analyze Piping and Equipment details, Interpret Instrument and Electrical systems, Learn how to read and understand P&IDs, and recognize the importance of the notes section for capturing additional information.

TOPICS COVERED

- P&ID Purpose & Structure
- P&ID Sections
- Legends and Symbols
- Technical Details in P&IDs
- Piping & Equipment Details
- Instrument Systems
- Electrical Systems
- How to read and understand P&IDs

HAZARD AND OPERABILITY STUDIES (HAZOP)

Module 4

INTRODUCTION

The main goal of a HAZOP study is to identify deviations from the Intended Design or Operation of a Process or system that could cause Hazards or Undesirable Outcomes. This includes Safety Hazards, Environmental Issues, Inefficiencies, Equipment Failures, and adverse effects on People, Property, & Environment

OBJECTIVE

HAZOP study aims to thoroughly analyze a Process or System, Track down deviations from its intended design or operation that could result in Hazardous or Undesirable outcomes.

TOPICS COVERED

- Safety Talk (Bhopal Incident).
- HAZOP Overview.
- Advantages & Disadvantages of HAZOP.
- HAZOP Methodology
- Risk Matrix.
- Software for HAZOP.
- HAZOP Worksheet

QUANTITATIVE RISK ASSESSMENT **(QRA)**

INTRODUCTION

Quantitative Risk Assessment (QRA) is a vital tool for evaluating safety in Chemical Process Industry. It assesses the risks associated with Usage, Handling, Transport, and Storage of dangerous substances, providing numerical values for the probability and Consequences of Potential Incidents.

OBJECTIVE

The objectives of QRA is to provide a Reliable, Structured, and Rigorous approach to Risk assessment, enabling Organizations to make informed decisions, Develop Effective Risk Management Strategies, and Ensure Compliance with Regulatory Requirements.

TOPICS COVERED

- QRA Methodology
- Risk analysis
- Consequence analysis
- Frequency analysis
- ALARP demonstration
- Software's Used
- Prerequisites

Safety Integrity Level (SIL)

INTRODUCTION

Safety Integrity Level (SIL) is a fundamental concept in the field of Process Safety. It provides a Quantitative measure of reliability and effectiveness of Safety Instrumented Systems (SIS) in reducing and mitigating risks associated with Hazardous Events. Understanding SIL is crucial in Designing, Implementing, and Maintaining Safety Measures to ensure Safe Operation of Industrial Processes.

OBJECTIVE

Objective of SIL is to gain knowledge and understanding of Hazard Identification and Risk Analysis, Process Hazard Analysis, Layer of Protection Analysis, Safety Instrument Functions, and Safety Integrity Levels. These Skills shall contribute effectively to the implementation and maintenance of safety measures in Industrial processes, ensuring protection of Personnel, Assets, and Environment.

TOPICS COVERED

- Basics of SIL, SIF, SIS
- SIF in Process Industry
- IEC 61508 & IEC 61511
- Basic Terminologies
- SIL Classification
- Concept of LOPA
- Initiating Events

HAZARDOUS AREA CLASSIFICATION **(HAC)**

INTRODUCTION

Hazardous Area Classification (HAC) is carried out to identify places where an Explosive Environment may be present. The Explosive Environment can be attributed by flammable Fluids, Dusts, Fiber etc. HAC provides a method to determine the specification of Electrical Equipments and Instrumentations based on the existing Operating condition, fluid type, duration of flammable etc.

OBJECTIVE

The objective of the Hazardous Area Classification (HAC) Analysis is to identify and Classify a Region, Space, or location within a facility that handles Flammable/Combustible Material.

HAC analysis is to minimize uncontrolled ignition by Electrical Equipment or hot surfaces of flammables in air that could lead to Fires or Explosions resulting in equipment and property damage as well as potential loss of life.

TOPICS COVERED

- Introduction
- Evolution of area classification
- Applicability of Hazardous Area Classification
- Standards for Hazardous Area Classification
- Point source/risk based method
- Effect of ventilation
- Determine grade of release
- Determine the extent of hac

PROCESS SAFETY MANAGEMENT **(PSM)**

INTRODUCTION

Process Safety Management (PSM) is a comprehensive system focused on Preventing, Preparing for, Mitigating, responding and recovering from catastrophic release of chemicals or energy in Process Plants. PSM systems Manage Hazards and Risks associated with processes using Hazardous Chemicals or Energy, emphasizing the performance of Equipment and Personnel throughout their lifecycle.

The ultimate goal of PSM implementation is to ensure the well-being of Workers, Neighbors, and the Environment by striving towards Zero harm.

OBJECTIVE

- Zero Incidents.
- To help companies pursue and achieve the “Perfect Process Safety” vision attaining zero harm.
- Management system approach to Process Safety.
- Integrated Management System approach remains very useful way to focus and adopt Accident Prevention Activities.

TOPICS COVERED

- PSM Elements as per OSHA Standards
- PSM Elements as per CCPS Standards

Module 9

EFFECTIVELY HARNESS THE POWER OF YOUR NETWORK BY USING LINKEDIN

INTRODUCTION

This session aims to provide participants with valuable insights and practical tips on how to leverage LinkedIn to maximize their professional network. It will explore the potential of LinkedIn as a powerful tool for career development and building professional relationships

OBJECTIVE

The objective of this session is to equip participants with the knowledge and skills necessary to effectively utilize LinkedIn for networking purposes, enhancing career opportunities, and establishing a strong professional presence online.

TOPICS COVERED

- Introduction to LinkedIn and its key features
- Building a compelling LinkedIn profile that stands out
- Networking strategies for expanding your professional connections
- Leveraging LinkedIn groups and communities for engagement and learning
- Utilizing LinkedIn's job search and career advancement features

Module 10

INTRODUCTION TO CHATGPT AND EXPLORING THE USE OF AI TOOLS IN OIL AND GAS INDUSTRY

INTRODUCTION

This session provides an introduction to ChatGPT and other AI Tools , and exploring its applications in Oil and Gas industry. Participants will gain insights into the capabilities of AI and its potential to revolutionize various aspects of the industry

OBJECTIVE

The objective of this session is to familiarize participants with AI tools and highlight its practical applications in the Oil and Gas sector. It aims to showcase how AI tools can enhance decision-making, optimize operations, and improve efficiency within the industry.

TOPICS COVERED

- Introduction to AI and its underlying technology
- Understanding the potential of AI in the oil and gas industry
- Various Applications of ChatGPT & Bard Softwares in exploration and reservoir analysis
- Leveraging AI for predictive maintenance and asset optimization
- Enhancing safety and risk management through AI-powered solutions

TRAINERS



Trainer Name : Mr. Srinivasan V (Senior Consultant – Process Safety Engineering)



Trainer Name : Mr. Rajaram U (Lead Process Engineer)



Trainer Name : Mr. Sivakumar K (Lead Process Design Engineer)



Trainer Name : Mr. Nirmal Kumar (Principal Engineer – Process & Technical Safety)



Trainer Name : Ms. Pia Judith (Lead Process Safety Engineer)



Trainer Name : Mr. Sridhar T V (Lead Engineer-Process & Technical Safety)



Trainer Name : Mr. Vinod (Senior Technical Safety Engineer)



Trainer Name : Mr. K. Godwin Sam. (Lead Engineer – Process & Technical Safety)



Trainer Name : Mr. John Kingsley (Guest Trainer)



Trainer Name : Mr. Premnath D (Design and Digital Engineer)

TRAINING FEATURES

- Job Oriented Training Program based on Current Industry Demand
- Comprehensive coverage of key topics in Oil and Gas industry.
- Training Materials & Recordings
- Expert Instructors with Industry Serving experience.
- Interactive learning methods and engaging sessions.
- Industry-relevant examples and Case Studies.
- Networking with Industry Professionals.
- Certificates upon successful completion of Training & Assessments.
- Job opportunities for Exceptional performers in Training

ONLINE SESSION

- The Training Session will be conducted in Zoom meeting.
- The joining link for all training sessions will be shared via email prior to the sessions using the Participants contact email ID furnished at the time of registration
- It's mandatory for all participants to mark their presence in the attendance form shared during the session. Failure to do so will result in being marked absent.
- Daily Duration of Training will be 1.5 hours Additional 30 minutes has been allotted towards doubt clearing session.
- All Training module recordings will be uploaded on the [iFluids YouTube channel](#) for Participants future reference.

ONLINE ASSESSMENTS & REASSESSMENTS

- All Online Assessment questions will be in Multiple-Choice Format (MCQs).
- All registered Participants shall undergo Preliminary Online Assessment, which shall cover Basic Chemical Engineering Concepts and Aptitude.
- Only Participants who qualify the Preliminary Online Assessment with a minimum of 50% mark shall be eligible to take part in the training
- Participants should mandatorily attend daily Assessments Exam for the previous day's module within the suggested time frame.
- Participants who fail to attend the assessment exam should contact the authorities beforehand via email at training@ifluids.in to prevent disqualification.
- During Assessments, strict monitoring will be enforced, and any misconduct will lead to disqualification.
- Participants must achieve a minimum score of 50% in the daily assessment to qualify the Exams.
- If a Participant fails to meet the 50% threshold, they will be given a chance for Reassessment.
- Participants can continue attending the entire training modules regardless of the results of the daily assessments
- Reassessments shall only be scheduled after the entire training period, allowing Participants spare enough time to prepare.
- The Date and Time for Reassessments will be communicated in advance via E-mail

CERTIFICATES & JOB PLACEMENTS

- Participants who have attended and successfully passed all Assessment & Reassessment exam will receive training completion Certificate.
- Participants who demonstrate exemplary performance throughout the entire training duration shall have an opportunity for Job Placement in iFluids Engineering.
- iFluids Engineering holds ultimate authority over decision-making in all aspects of the training program

PRELIMINARY ONLINE ASSESSMENT SCHEDULE

SL. No	Date	Topic	Assessment Time
1.	02- June -23	Preliminary or Qualifying Assessment (Aptitude & Basics of Chemical Engineering)	05:00 PM- 06:00PM

ONLINE TRAINING SCHEDULE

SL. No	Date	Day	Description	Trainer	Training Time (5PM -7PM)	Online Assessment Time 10 AM ~11AM
1.	07-Jun-23	Wednesday	Overview of Oil & Gas Industry -1	Mr. Srinivasan V	5:00- 07:00 PM	
2.	08-Jun-23	Thursday	Overview of Oil & Gas Industry -2	Mr. Srinivasan V	5:00- 07:00 PM	Oil & Gas Overview-I
3	09-Jun-23	Friday	Process Design Fundamentals, PFD	Mr.Rajaram U	5:00- 07:00 PM	Oil & Gas Overview-II
4	10-Jun-23	Saturday	Piping &Instrumentation Diagram -I	Mr. Sivakumar K	5:00- 07:00 PM	Process Flow Diagram (PFD)
5	12-Jun-23	Monday	Piping &Instrumentation Diagram -II	Mr. Sivakumar K	5:00- 07:00 PM	Piping & Instrumentation Diagram -I
6	13-Jun-23	Tuesday	HAZOP -I	Mr. Nirmal Kumar	5:00- 07:00 PM	Piping & Instrumentation Diagram -II
7	14-Jun-23	Wednesday	HAZOP -II	Mr. Nirmal Kumar	5:00- 07:00 PM	HAZOP - I
8	15-Jun-23	Thursday	QRA-I	Ms. Pia Judith	5:00- 07:00 PM	HAZOP - II
9	16-Jun-23	Friday	QRA-II	Ms. Pia Judith	5:00- 07:00 PM	QRA - I
10	17-Jun-23	Saturday	Functional Safety (SIL)	Mr. Sridhar T V	5:00- 07:00 PM	QRA - II
11	19-Jun-23	Monday	Hazardous Area Classification (HAC)	Mr. Vinod	5:00- 07:00 PM	Functional Safety (SIL)
12	20-Jun-23	Tuesday	Process safety Management (PSM) - I	Mr. Godwin Sam	5:00- 07:00 PM	Hazardous Area Classification (HAC)
13	21-Jun-23	Wednesday	Process safety Management (PSM) - II	Mr. Godwin Sam	5:00- 07:00 PM	Process safety Management (PSM) -I
14	22-Jun-23	Thursday	Impact of AI in Oil & Gas Industry	Mr.Premnath D	5:00- 07:00 PM	Process safety Management (PSM) - II
			Harness the Power of Network by using LinkedIn	Mr. John Kingsley		

RE-ASSESSMENT SCHEDULE

SL No	Date	Day	Re-Assessment Topics
1	26-Jun-23	Monday	Oil & Gas overview -I&II
2	27-Jun-23	Tuesday	PFD & P&ID-I
3	28-Jun-23	Wednesday	P&ID-II & HAZOP- I
4	29-Jun-23	Thursday	HAZOP- II & QRA-I
5	30-Jun-23	Friday	QRA -II, SIL
6	01-Jul-23	Saturday	HAC, PSM-I, PSM-II

THANK YOU

For any Training Assistance



training@ifluids.in



+91 90254 00631



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OR

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<https://forms.gle/99jKaK2Gzs78cpie9>