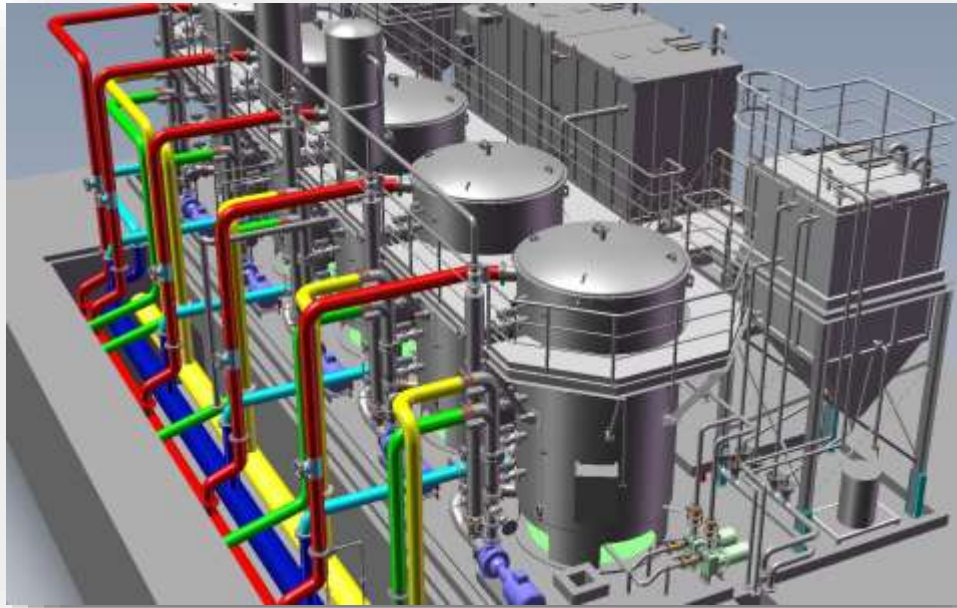




PCE132

Process Design & Engineering of Gas Processing Facilities and Equipment

Course Introduction:

This course is designed to provide an understanding and skills in process engineering of gas processing plants/facilities and equipment. The program is a good opportunity for participants to familiarize with practical techniques, useful criteria (including short cuts) for designing and troubleshooting process equipment commonly used in gas processing plants.

Course Objectives:

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

- ✓ Calculate, evaluate and compile process data for the specification, design, selection and operation of process equipment
- ✓ Possess enhanced skills and knowledge in process engineering, including design methods, criteria, calculation procedures and short-cut techniques
- ✓ Perform the evaluation, diagnostic monitoring and troubleshooting of existing process equipment, including de-bottlenecking and revamping methods
- ✓ Evaluate technical proposals and prepare scoping cost estimates
- ✓ Prepare comprehensive process specification documents for bid packages

Who Should Attend?

This course is intended for those who are involved with process engineering, instrumentation & control including process engineers mechanical & equipment engineers, project engineers and maintenance engineers.

Course Outline:

Day 1:

Introduction

- Course overview
- Gas processing overview
- Process equipment categories
- Mechanical and safety aspects

Process Control and Instrumentation

- Instrumentation types and selection
- Control valves sizing and selection
- Pressure relief devices and systems

Piping

- Fluid flow principles
- Pressure loss categories
- Pipe properties
- Sizing methods and criteria
- Two-phase flow

Day 2:

Conventional Separators

- Types and functions
- Sizing criteria and method
- Design considerations and internals
- Process operating problems

Pumps

- Categories and types
- Performance characteristics
- Control systems
- Design criteria and parameters
- Pump selection guidelines
- Process operation troubleshooting

Compressors

- Categories and types
- Compression process
- Characteristics and terminologies
- Design Criteria and parameters
- Compressor control methods
- Selection guidelines
- Drivers
- Process operation problems/troubleshooting

Day 3:

Fired Heaters

- Heater types
- Process applications
- Selection guidelines
- Process operating problems

Heat Exchangers

- Heat exchanger types
- Process applications
- Heat transfer terms and equations

- Design criteria and parameters
- Fouling considerations
- Reboilers
- Calculation methods
- Selection guidelines
- Process operation problems/troubleshooting

Air Coolers

- Air cooler types
- Design and operating considerations
- Process operating problems/troubleshooting

Day 4:

Fractionation Columns

- Fractionator types
- Process design methods
- Trays vs packing
- Operating parameters
- Process operating problems/troubleshooting

Gas Processes

Gas Sweetening

- Process selection
- Process description
- Major equipment
- Equipment design guidelines
- Troubleshooting

TEG Gas Dehydration

- Process selection
- Process description
- Major equipment
- Equipment design guidelines
- Troubleshooting

Day 5:

Molecular Sieve Gas Dehydration

- Process selection
- Process description
- Major equipment
- Equipment design guidelines
- Troubleshooting

HC Dewpoint Control

- Process selection
- Process description
- Major equipment
- Equipment design guidelines

NGL Recovery

- Process selection
- Process description
- Major equipment
- Equipment design guidelines

Course Certificate:

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

Course Methodology:

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 Fees:

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

Course Timings:

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

