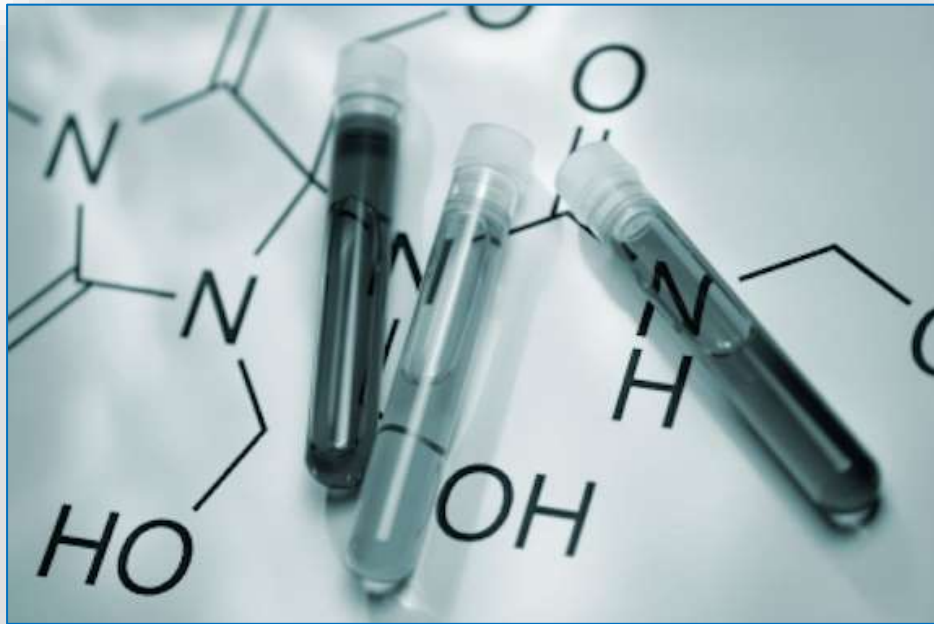




PCE142

Essentials of Chemical Engineering for Non Chemical Engineering

Course Introduction:

In today's workplace, non-engineers are increasingly expected to work with chemical engineers on projects, scale-ups and process evaluations. But to do so, you need a solid understanding of basic concepts of chemical engineering analysis, design and calculations. In this course you will gain knowledge of the fundamentals of chemical engineering you need to understand, communicate and work with chemical engineers.

Course Objectives:

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

- ✓ The role of chemical engineering and chemistry scale up
- ✓ The basics of stoichiometry
- ✓ Commonly used chemical engineering calculations
- ✓ The basics of safety, industrial hygiene and reactive chemicals
- ✓ What you need to know about fluid flow, heat transfer, heat exchanger design and cooling towers
- ✓ Separation technologies – including distillation, absorption, stripping, adsorption, ion exchange and membranes
- ✓ What every non-engineer needs to understand about evaporation, crystallization, liquid-solid separations and drying
- ✓ Solids handling – the basics
- ✓ Breaking down the basics of tank and vessel design
- ✓ Essentials of polymerization and polymer processing
- ✓ Gain a working knowledge of process control

Who Should Attend?

This course is intended for all non-engineers without formal chemical engineering training who have up to three years of experience working in a plant with chemical engineers. It will be especially valuable to operating technicians, engineering managers who are not chemical engineers, chemists, DHS, EPA and other government employees and other engineers.

Course Outline:

Day 1:

- Safety, toxicology, ethics, and economics
- The "HHO" Reactor
- Processing, scale-up, and stoichiometry

Day 2:

- Mass balances, Kinetics, and Reaction Engineering
- Fluid flow, Pumps, Viscosity, Laminar vs. Turbulent Flow
- Heat Transfer, Heat Exchangers, Energy Balances

Day 3:

- Concepts and Basics of Reactive Chemicals Analysis
T-2 Fire and Explosion
- Distillation and Stage Wise Contacting
- Absorption, Stripping, and Extraction

Day 4:

- Evaporation and Crystallization
- Filtration and Drying
- Solids Handling and Processing

Day 5:

- Review of Pt. Wentworth Sugar Plant Fire and Explosion
- Tanks and Vessels
- Chemical Engineering in Polymers/ Polymer Processing
- Process Control and Control Valves

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, and-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

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