Online Refresher Course on

"CHEMICAL ENGINEERING FOR PLANT PERSONNEL"

on Thursday-Friday, 25 & 26 November 2021

PROGRAM	
Day 1: 1.30 pm to 5.30 pm	
01.30 - 01.35 p.m.	**Welcome by: ICC**
01.35 - 02.30 p.m.	**Lecture-1: Chemical Engineering Basics & Calculations by:** **Prof P. R. Gogate, ICT, Mumbai** A. Units & Conversions B. Concepts of Mole, Vapor Pressure, Humidity, Stoichiometry C. Material Balance computations with and without recycles D. Energy Balance: Fundamentals and Computations
02.30 - 03.30 p.m.	**Lecture-2: Fluid Flow Basics, Situations and Utilities by:** **Mr. O.P. Goyal, Ex- Chemical Industry Professional** A. Equation of Continuity, Bernoulli Equation, Static Head calculation B. Reynolds number, Hydraulic diameter, Friction factor, Piping pressure drop calculation C. Centrifugal Pump Curves. Affinity Laws and Power Consumption Calculation D. Introduction to Plant Utilities and Cooling Towers
03.30 - 03.40 p.m.	**RELAXATION BREAK**
03.40 - 04.40 p.m.	**Lecture-3: Process Heat Transfer by:** **Mr. Arvind Kaushik, Consultant** A. Basics of Heat Transfer and Types of Heat Exchangers B. Design of Shell & Tube Heat Exchangers C. Design Aspects of Condensers and Thermosiphon Reboilers D. Introduction to Miscellaneous Considerations
04.40 - 05.30 p.m.	**Lecture-4: Distillation by:** **Prof P. R. Gogate, ICT, Mumbai** A. Basics of Distillation B. Types of Distillation and Key Operations C. Column Types and internals D. Design Aspects and Controls
Day 2: 1.30 pm to 5.30 pm	
01.30 - 02.30 p.m.	**Lecture-5: Separation Process: Absorption and Adsorption by:** **Prof P. D. Vaidya, ICT, Mumbai** A. Absorption/Adsorption revisited, and Interphase mass transfer B. Gas-liquid contacting, and Design of Towers for Absorption and Stripping C. Adsorption Equilibria, Isotherms D. Adsorption in fixed beds, Mass transfer considerations E. Types of adsorbents, Ion exchange resins
02.30 - 03.30 p.m.	**Lecture-6: Process Control by:** **Prof Sujit Jogwar, IIT Bombay, Mumbai** A. Basics of process control for batch and continuous processes B. PID control principle, selection and tuning C. Traditional and model-based advanced control D. Conventional control for heat exchanger, reactor, distillation column and compressor

03.30 – 3.40 p.m.	**RELAXATION BREAK**
03.40- 04.40 p.m.	**Lecture-7: Process Safety by:** **Mr. K. Sahasranaman, Member, Technology & Energy Expert Committee-ICC** A. Safety and Risk B. Types of Safety C. Principles of Inherent Safety D. Layers of Protection, and Brief introduction to HAZOP
04.40 - 05.15 p.m.	**Interactive Quiz**
05.15 - 05.30 p.m.	**Vote of Thanks**