

Cheminformatic Institute of Science Studies Lucknow

Diploma Program in Chemical Engineering (DPCE)

Program Curriculum

Module 1: Introduction to Chemical Engineering

- 1.Role of a Chemical Engineer Introduction 1
2. Modern Chemical Engineering Plants
- 3.Chemical Engineer and Chemical Engineering Profession
- 4.Role and Importance of Basic Sciences in Engineering
- 5.Dimensionless Analysis and Scale-up: Another Illustration of How Physics and Mathematics can be Combined
- 6.Semi-empirical Approach in Engineering: Departure from Scientific Rigor
- 7.Safety, Health, Environment and Ethics

Module: 2 Fundamentals of Chemistry

- 1.Reactions of Alkenes and Alkynes
- 2.Aromatic Compounds
- 3.Stereochemistry Tetrahedral Centers
- 4.Organ halides: Nucleophilic Substitutions and Eliminations

Module 4: Chemical Engineering Thermodynamics

1. Introduction
2. Thermodynamic Property Relationships
3. Phase Equilibrium
4. Principle of Phase Equilibrium II
5. Applied Phase Equilibrium
6. Chemical Equilibrium

Module 4: Material Properties of Plastics

- 1.Classification of plastics
- 2.Engineer process chain
- 3.Processing methods
- 4.Material selection and calculations
- 5.Processing

Module 5: Techniques of Process Simulation

- 1.Heterogeneous Modeling
- 2.Heterogeneous Modeling
- 3.Models of Computation
- 4.Process Networks and Rendezvous
- 5.Synchronous-Reactive Models
- 6.Finite State Machines

Module 6: General Chemistry

1. Introduction
2. Atoms, Molecules and Ions
3. Stoichiometry
4. Gases
5. Energy Relationship in Chemical Reactions
6. The Electronic Structure of Atoms
7. Chemical Bonding
8. Chemical Equilibrium