

## **MSE483 Plant Design (3 CH)**

**Pre-requisites:** None

### **Course Objectives**

1. To know about the basic of plant layout design, plant layout specifications, Site Selection, Equipment list and site safety parameters, energy and utility balance.

### **Course Contents**

2. The Basics of plant Design, Plant layout specifications, Site selection, Equipment Selection,, Specs and Design, Fundamentals of mass conservation and mass balance, Fundamentals of energy conservation and energy balance, Process control and instrumentation, Safety parameters, Liquid storage tanks, Costing and project evaluation.

3. Computer aided design: General steps for HYSYS based modeling, HYSYS based model for Benzene Production, HYSYS based model for Cyclopentane production Block Flow Diagrams of the following Industries: Steel industry, Cement, Ceramics, Glass, High Density Polyethylene, Pulps and Papers, Composites, Acid gas Sweetening, Petroleum Refinery.

### **Course Outcomes:**

4. The participants of the course will be get the awareness of the basic of plant layout design, plant layout specifications, Site Selection, Equipment list and site safety parameters, energy and utility balance.

### **Suggested Books**

1. Kam W. Li and A. Paul Priddy, *Power Plant System Design*, Wiley, (1985)
2. Ed Bausbacher and Roger Hunt, *Process Plant Layout and Piping Design*, Reprint Edition, PTR Prentice Hall, (1993)
3. W.D. Baasal, *Preliminary Chemical Engineering Plant Design*, 2<sup>nd</sup> Edition, Van Nostrand Reinhold Press, (1990)