

CHEME 2004: Mass and Energy Balance

項目	內容
課程概述	Part 1. Introduction Part 2. Material Balances Part 3. Energy Balances
課程目標	1. Engineering problem analysis; 2. Material balances; 3. Energy balances.
課程要求	No requirement
參考書目	Textbook : Elementary Principles of Chemical Processes 3rd Edition Felder.Rousseau
指定閱讀	

Description:

CHEE 2004 is an introductory stoichiometry course that prepares students to formulate and solve material and energy balances on chemical process systems at steady-state (i.e. no change with time), and is the foundation for future courses in: thermodynamics (3rd year) kinetics and reactor design (3rd year), unit operations and transport phenomena (2nd and 3rd year) process dynamics and control (4th year)

The advance course of Mass and Energy Balance will introduce:

1)transient (time-varying) behavior 2) larger scale problems 3) systems of equations

No universally accepted definition of chemical engineering exists. Today, almost every type of skilled work you can think of employs someone who was educated as a chemical engineer. Examples are:

Traditional chemical engineering: mining, pulp & paper, oil refining, materials (rubber, plastics, etc.), environmental...

Non-traditional chemical engineering: microelectronics (semiconductor manufacturing), biotechnology (pharmaceutical production processes, genetic engineering etc.)

A similarity in all the chemical engineering systems is that the systems involve processes designed to transform raw materials into desired products. A typical problem in the design of a new or existing process is:

Given the amounts and properties of the raw materials, calculate amounts and properties of the products, or vice versa (use material and energy balances to solve.)