

Unit operations 2

 ECTS
5 credits Component
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE Number of
hours
81h

Presentation

Description

Programme (detailed contents):

* General concepts for mass transfer unit operations (presentation, ideal stages, operating lines, equilibrium stage, kinetic concepts)

* Unit operations of mass transfer

Technology of different separators

Design tools of separators. Application to extraction, distillation (continuous and batch), absorption, adsorption..

Organisation:

Lectures, tutorials and lab work.

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- Phase equilibrium diagrams
- General concept for mass transfer unit operations (Ideal stages, operating lines...). Kinetic limitations and their effects on separation
- Different ways to perform separation processes (single contact, cross-current and counter-current contactors)
- design tools for separators.

The student will be able to:

- use the equilibrium diagrams
- choose the required technology for a separation
- choose the contact mode
- write the mass balance
- design a multistage separation device (extraction, distillation, adsorption, absorption...)
- then propose a contactor technology.

Pre-requisites

Transport and reaction in fluid medium.

Thermodynamics.

Fluid properties and mass transfer.

Basic concepts for unit operations.

Useful info

Place

➤ Toulouse