


Mass transfer

 **ECTS**
6 credits **Component**
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE **Number of
hours**
51h

In brief

> **Teaching language(s):** Français, Anglais

Presentation

Description

Fundamental laws of mass transfer phenomena : conduction, convection. Steady state and transient state. Mass balance. Transfer in several phases. Reaction and transfer. Application to biotechnologies (oxygen transfer). Heterogeneous catalysis. Optimal design methodology and experimental strategy. Experimental designs. Factorial designs. Response surface. Optimal responses determination. Study of mixtures.

Organisation:

Lectures, tutorials with exercises (application to bioprocess) and lab works

Objectives

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

To understand mass transfer phenomena (diffusion, convection).

The student will be able to:

- read, interpret, propose an installation flowsheet
- to write global balances on a process in order to calculate matter and energy flows
- identify of information fluxes
- make an critical analysis of a process
- be able to design an optimal set of experiments

Pre-requisites

Thermodynamics of solutions / Differential and partial derivative operations

Useful info

Place

➤ Toulouse