



SC

## CHIM2201 Cinétique chimique appliquée I

[22.5h+0h exercises] 2.5 credits

This course is taught in the 2nd semester

**Teacher(s):** Jacques Vandooren  
**Language:** french  
**Level:** 2nd cycle course

**Aims**

Conception of chemical reactors from cinetic analysis data.

**Main themes**

Introduction: - classification of chemical reactors - ideal and real reactors - studying the conception of experimental reactors (open or closed system)

Chapter 1 : calculating ideal chemical reactors from the cinetic data; XX reactors with discontinued production, tubular reactors with piston flow, mixing reactors perfectly shaken in isotherm process, influence of the reactor's nature on product formation selectivity in composed reactions.

Chapter 2 : Heterogeneous catalysis and catalytic reactors : chemical kinetics of heterogeneous catalytic reactions, microkinetic on the reactor's grain level, using heterogeneous catalysers in conversion processes: conception of reactionnal section.

Chapter 3 : Analysis of the behaviour of non-ideal catalytic reactors on the bed-level: origin of non-idealism, experimental study of the distribution of time spent in the reactor, tubular reactor model with axial dispersion.

Conclusion : The development of catalytic processes.

Seminaries (15hrs) under the form of personal work and/or assisted, the exercises focused on calculating the chemical reactor's characteristics.

**Other credits in programs**

**CHIM21** Première licence en sciences chimiques  
**CHIM22** Deuxième licence en sciences chimiques