



## CHM1371 Metabolic Biochemistry

[30h+30h exercises] 5 credits

This course is taught in the 2nd semester

**Teacher(s):** Yves-Jacques Schneider  
**Language:** French  
**Level:** First cycle

### Aims

The objective of the theoretical course is to examine the general aspects of glucides, lipids, amino acids and nucleotides metabolism, as well as their regulation. The course must allow the acquisition and mastering of several types of competences: General knowledge of metabolism and its regulation modes ; comprehension of reactional mechanisms, representation of main metabolic ways, as well as their main regulations ; Integration of metabolism in the physiology context of cells and organisms, mainly animal.

The goal of exercises is :

Deepening, by practical exercises, basic notions seen in the theoretical course ; by the realization of a personal interdisciplinary work, based on a problem-situation, integrating the understanding of metabolic biochemistry in the context of life sciences.

### Main themes

Main themes to cover :

Introduction to metabolism

Bioenergetics

Biochemical transport phenomenon

Main metabolic ways :

Glycolysis and hexose catabolism

Metabolism of glycogen and glyconeogenesis

Oxidation of fatty acids and biosynthesis of lipids

Krebs cycle

Electron transport, oxidative phosphorylation

Metabolism of amino acids, nucleotides and linked molecules.

Main ways of regulation.

The exercises are divided into two complementary parts :

One, followed in the case of CHIM BAC, consists of practical work on a specific question in biochemistry.

The other, for all, consists of preparing, presenting and discussing, in groups, a question linked to a biochemical problem, but voluntarily carrying onto other disciplines of life sciences.

### Other credits in programs

**INFO23** Troisième année du programme conduisant au grade (5 credits)  
 d'ingénieur civil informaticien