



BIO1114 Introduction to biology

[30h+7.5h exercises] 3 credits

This course is taught in the 1st semester

Teacher(s): Michel Baguette, Claude Remacle, Philippe van den Bosch Sanchez de Aguilar (supplée Claude Remacle)
Language: French
Level: First cycle

Aims

The course consists in an initiation to fundamental concepts in biology, with examples of applications. It features the particularities of the approach in biology, facing the complexity and diversity of its objects.

Main themes

The cell and organelles

How physics and chemistry are implicated in the structure and function of the cell.

How cells are studied.

The programme and the nucleus; the membranes and compartments; the energy and syntheses; the movement and cell organisation.

The control of cell behaviour by extra- and intracellular signalling.

The transmission of the programme.

The integration of cells into a pluricellular organism.

The differentiation and variety of cells ensure the diversity of organism's functions (protection, motility, inputs and outputs of metabolism, coordination, reproduction)

The evolution guided the history of living things.

The origin of life, the major kingdoms and their diversity, the mechanisms of evolution.

The organisms are associated within the biosphere, with complex interactions.

Biosphere and diversity of environment, ecosystems and communities (food networks, energy pyramid, biogeochemical cycles), populations (growth, regulation, human population).

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: none.

Reference books: N.A. Campbell, Biologie, De Boeck Université, 1995.

Teaching method: lectures with contribution of current media.

Practical works: exercises will illustrate biological subjects, with organism observation (plant or animal), from whole organism to cellular structure under microscope. Other sessions will evoke the intervention of student own discipline (p.e. physics) in an area of biology (personal research and results presentation).

Evaluation: oral examination with written preparation.

Other credits in programs

MAFY11BA	Première année polyvalente en sciences mathématiques et physiques	(3 credits)
PHYS12BA	Deuxième année de bachelier en sciences physiques	(3 credits)