UCL Université catholique de Louvain

LBBMC2102

2015-2016

Biologie moléculaire et cellulaire intégrée

3.0 credits	30.0 h	1q

Teacher(s) :	Batoko Henri ; Rezsohazy René ; Hallet Bernard ; Schneider Yves-Jacques ; Morsomme Pierre (compensates Schneider Yves-Jacques) ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	The main topics of the course include :- signalling modules and pathways involved in cell perception and communication- mechanisms of gene regulation including epigenetic modifications of DNA and chromatin, transcriptional and translational regulations (small RNAs etc), as well as the posttranslational modifications of proteins and their turnover- regulation of metabolic activities- cell cycle and its control- molecular bases of cell differentiation and cell death- intracellular trafficking
Aims :	The course aims at integrating the molecular and cellular bases of the living world, from prokaryotic to eukaryotic cells. It should be regarded as an in-depth continuation of the undergraduate foundations acquired through the relevant cell biology, molecular genetics, biochemistry and metabolism courses, with emphasis on the integration of approaches and methodologies underpinning our understandings of life. The purpose is to understand how a cell can perceive the variations of its environment (within an organism or as a population of cells) and how it will translate these environmental cues into an appropriate response. This will require the understanding of different modes of cell communication and pathways underlying information transduction as well as their outputs in terms of metabolic activity, gene expression, cell division or differentiation. The various aspects will be treated with an evolutionary perspective, highlighting the common themes of life as opposed to peculiarities of the microbial, plant or animal worlds.This course should be considered as an anchor for the more specialized studies in molecular and cellular biology of microorganisms, plants, animals and humans, within the master program. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	The content of the course is divided into specific modules developed by each lecturer, making the best possible use of his/her main expertise and up-to-date literature in his/her field of interest. Each scientific concept is developed with the aim of highlighting the current state-of-the-art, both in terms of basic knowledge and technological approaches.
Other infos :	Precursory courses: Students must be familiar with most fundamental concepts and techniques in molecular and cellular biology (level BIO13) Evaluation: Students are expected to perform a critical reading of a proposed research paper relevant to each module of the course and discuss the findings orally with the involved lecturer. Support: Research papers and lecture PowerPoint presentations Teaching team: Co-lecturers with specific and complementary fields of expertise
Faculty or entity in charge:	BIOL

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [60] in Biology	BIOL2M1	3	-	
Master [120] in Biochemistry and Molecular and Cell Biology	BBMC2M	3	-	