

6.00 credits

50.0 h + 10.0 h

Q1

Language :	French
Place of the course	Bruxelles Woluwe
Prerequisites	<i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
Main themes	Sub-sections : - A. General aspects : physico-chemical aspects of biochemical processes (including enzyme kinetics and classification, bioenergetics); - B. Molecular Biology (in Eukarya) : from genes to active proteins (structure and regulation); interest of molecular biology in diagnosis and drug development. - C. Metabolism : description, regulation, and tissue specificity of key anabolic and catabolic pathways. - D. Integrated view of metabolic pathways in the whole organism; modulation in several (patho)physiological situations.
Learning outcomes	
Evaluation methods	Students will be evaluated on their ability to synthesize and integrate multiple biochemistry data into a coherent whole. They must be able to describe, use and explain in precise biochemical terms all aspects of the course. Written exam, face-to-face.
Teaching methods	Lectures, face-to-face. The tutorials will be carried out face-to-face but remote sessions can be organized in case of practical problems of room availability
Content	Biochemistry basics: application of theoretical chemical concepts to biological processes. Illustration of concepts (molecular recognition, enzymology, bioenergetics, etc.) by examples of interest in the field of Pharmaceutical and Biomedical Sciences (enzymes metabolizing drugs; enzymes involved in signal transduction; synthesis of peptide drugs; design of enzyme inhibitors as new therapeutic molecules). Metabolism: description (molecular aspect and regulation of enzymes) and regulation of carbohydrate, lipid, amino acid and nucleotide metabolism, and ATP production control processes; the focus is on the discovery of key reactions and intermediates, and on cellular compartmentalization Integration Metabolic adaptation during changes in physiological state (adaptation to stress, nutritional status). Directed work allows: - to approach the subject by avoiding encyclopedic memorization (open book exercise, questions and answers) - to become familiar with the subject by addressing and interpreting the results of the literature
Inline resources	The slides presented during the lectures, as well as the information and documents related to practical courses and exercise sessions are available on MoodleUCL (https://moodleucl.uclouvain.be/).
Bibliography	Support de cours obligatoire : diapositives des cours disponibles sur Moodle, en version pdf
Other infos	Participation in tutorials and exercise sessions is essential to validate the teaching unit. In the event of repeated absences, even justified, the teacher may propose to the jury to oppose registration for the EU exam in compliance with Article 72 of the RGEE
Faculty or entity in charge	FASB

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Biomedicine	SBIM1BA	6	WFASB1102 AND WFASB1101	