UCLouvain

lbral2102

2019

Physiological and nutritional biochemistry

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

5 credits	45.0 h	Q1

Teacher(s)	Debier Cathy ;Larondelle Yvan (coordinator) ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	- A detailed description of the processes of digestion and absorption - A review of the main aspects of the metabolism of glucides, lipids and protides, with a special focus on the regulation and on the fate of the dietary constituents - An integrated view of the main metabolic pathways via the analysis of some specific physiological situations (fasting, diabetes, exercise, pregnancy, lactation) - A detailed analysis of the dietary requirements of humans (energy, nitrogen, amino acids, essential fatty acids, vitamins, water, minerals, dietary fibre), including the biochemical, metabolic and physiological justifications for them - A detailed presentation of the concept of 'healthy food' in relation with some chronic diseases such as type-II diabetes, cardiovascular diseases, metabolic syndrome, osteoporosis, obesity, neurodegenerative diseases, intestinal diseases.
Aims	a. <u>Contribution de l'activité au référentiel AA (AA du programme)</u> 1.1 ; 1.2 ; 1.4 ; 2.5 b. <u>Formulation spécifique pour cette activité des AA du programme</u> At the end of the course, the student will be able : 1 - to make to links between the major pathways of the energetic and nitrogen metabolism, - to expose the metabolic relationships between the different organs and physiological functions of the organism, - to discuss the impact of food items, specific nutrients, and feeding behaviours on human metabolism, - to give a justification for the nutrient requirements of humans, - to comment on the concept of « healthy food », - to give a sound opinion on the industrial developments in the frame of the « healthy food » concept, - to make practical and innovative proposals for the development of food items. - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Ongoing evaluation with written tests organized throughout the quarter (no exam during the session in January)
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Coordinated package of lectures given by the teachers and seminars given by invited experts Food industry visits Most of the activity requires the presence of the students.
Content	1 – Digestion and absorption 2 – Post-absorptive nutrient utilization • Nutrient utilization during the absorptive phase • Nutrient utilization during the postabsorptive phase • Nutrient utilization during prolonged energy malnutrition or complete food deprivation 3 – Physiological and pathophysiological situations • Sport • Lactation • Cancer

	• Obesity and metabolic syndrome 4 – Introduction to nutrition **5 –** Vitamin and mineral needs **6 –**Macronutrient needs 7 - Seminars (and food industry visits)
Inline resources	Moodle
Bibliography	Notes de cours données par les professeurs (dias disponibles sur Moodle) Livres de référence conseillés mais non imposés Slides used by the professors are available on Moodle Several references books are recommended (but not mandatory)
Other infos	This course can be given in English.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Biomedical Engineering	GBIO2M	5		
Master [120] in Chemistry and Bioindustries	BIRC2M	5		
Master [120] in Agricultural Bioengineering	BIRA2M	5		
Advanced Master in Brewing Engineering	BRAS2MC	5		