

5.0 credits

52.5 h

1q

Teacher(s) :	Larondelle Yvan (coordinator) ; Schneider Yves-Jacques ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>To reach its objectives, the course comprises :</p> <ul style="list-style-type: none"> - 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 study of the relationships between foods and health through some clear examples (diabetes, cardiovascular diseases, metabolic syndrome,).
Aims :	<p>At the end of the course, the student must have acquired a satisfactory understanding of the relationships between, on one hand, foods, nutrients and eating habits and, on the other hand, human metabolism, well-being and health, through a good knowledge of the effects of these foods, nutrients and eating habits on the major metabolic pathways, inter-organ relationships and physiological functions of the body.</p> <p><i>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".</i></p>
Content :	<p>The course is made of six complementary parts :</p> <ol style="list-style-type: none"> 1. Digestion and absorption (6h) 2. Metabolic regulation (12h) 3. Biochemistry of lactation (6h) 4. Dietary requirements in the major nutrients (7h) 5. Dietary requirements in vitamins and minerals (7h) 6. Relationship between food and health (11h) <p>The course starts with a detailed study of the physiology of digestion and absorption, followed by a synthetic summary of the metabolism of carbohydrates, lipids and protides. It continues with the relationships between nutrition and metabolism through several examples of specific metabolic situations, such as fasting, lactating or suffering from diabetes. The course then presents the nutritional requirements of humans together with the corresponding recommended daily allowance, in terms of energy, nitrogen, amino acids, essential fatty acids, vitamins, water, minerals and dietary fibre, with, in each case, a special focus on the biochemical justification of the needs. It ends up with the relation between nutrition and human health improvement, through the analysis of specific topics such as the impact of dietary lipids on cardiovascular diseases, and the concept of functional foods. This last part may be organized in the form of seminars prepared by the students on the basis of scientific articles and/or of talks given by senior scientists specialized in the field.</p> <p>Parts 1 and 2 may be taken as a partim of the course and correspond to 2 ECTS. Parts 2 to 5 may be taken as a partim of the course and correspond to 3 ECTS. Parts 2, 3 and 5 may be taken as another partim of the course and correspond to 3 ECTS.</p>
Other infos :	<p>Precursory courses Basic knowledge in structural and metabolic biochemistry</p> <p>Evaluation Written examination and potential evaluation of the presentations made by the students</p> <p>Support Textbooks, scientific papers and copy of the PowerPoint presentations of the teacher</p>
Cycle and year of study :	<p>> Master [120] in Chemistry and Bio-industries</p> <p>> Master [120] in Agricultural Bioengineering</p> <p>> Master [120] in Biomedical Engineering</p> <p>> Advanced Master in Food Science and Technology</p> <p>> Master [60] in Biology</p>
Faculty or entity in charge:	AGRO