



Universitat de Lleida

DEGREE CURRICULUM
METABOLISM AND NUTRITION

Coordination: RUBIO PIQUE, LAURA

Academic year 2023-24

Subject's general information

Subject name	METABOLISM AND NUTRITION			
Code	100637			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Human Nutrition and Dietetics	4	OPTIONAL	Attendance-based
Course number of credits (ECTS)	3			
Type of activity, credits, and groups	Activity type	PRAULA	TEORIA	
	Number of credits	1	2	
	Number of groups	1	1	
Coordination	RUBIO PIQUE, LAURA			
Department	FOOD TECHNOLOGY, ENGINEERING AND SCIENCE			
Important information on data processing	Consult this link for more information.			
Language	Català English (articles)			
Distribution of credits	2 credits masterful activity (classes) 1 credit seminar activity			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CORTIJO ALFONSO, MARIA ENGRACIA	engracia.cortijo@udl.cat	1	
RUBIO PIQUE, LAURA	laura.rubio@udl.cat	2	

Subject's extra information

Is known as metabolism and nutrition at chemical transformations suffering nutrients in tissues, once surpassed the processes of digestion and absorption corresponding. This metabolism includes degradative reactions to obtain energy (catabolism) and biosynthetic reactions to form biomolecules using part of this energy (anabolism). This course aims to expand knowledge regarding energy metabolism.

Learning objectives

1. Expand knowledge on the concept of energy metabolism of nutrients
2. Know the regulation of energy metabolism
3. Know the concept of energy consumption and the factors that influence
4. Know the latest developments in the field of energy metabolism and acquire the skills necessary to stay in place constantly update.
5. Expand knowledge about factors that metabolism influence (stress, chronobiology, gut microbiota).

Objective	Activity	Attended	Student dedication
1-4	Classes	20	30
1-4	Seminars	10	18

***Student dedication** = attended hours + hours of student work

Competences

Specific Competences

CE1-Know the chemical, biochemical and biological fundamentals of application in human nutrition and dietetics

General competences

CG4. Communicate effectively, both orally and in writing, with people, health professionals or industry and the media, knowing how to use information and communication technologies especially those related to nutrition and

living habits.

CG5. Know, critically evaluate and know how to use and apply sources of information related to nutrition, food, lifestyles and health aspects.

Basic skills

CB2 That students know how to apply their knowledge to their job or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their study area.

CB3 That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific, or ethical issues.

CB4 That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.

CB5 That students have developed the learning skills necessary to undertake further studies with a high degree of autonomy.

Transversal Competences of the UdL

CT1 Have a correct oral and written expression.

CT5. Acquire essential notions of scientific thought

Other competencies that are not in the subject but are in the degree

Subject contents

1. Energy metabolism. Basic concepts
2. Energy intake regulation mechanisms.
3. Energy value and bioavailability of nutrients
4. Glycemic index vs nutritional density
5. Energy expenditure. Basal metabolism, thermogenesis and physical activity
6. Energy expenditure in different physiological situations.
7. Metabolic flexibility and control of body weight
8. Influence of chronobiology, stress and genetic factors on metabolism
9. Metabolism and intestinal microbiota

Methodology

Classes

Classes are developed with all students. They aim to provide an overview of educational content related to specific knowledge of the subject

Seminars

Seminars will be held in the classroom. They will consist of practical tasks carried out individually or in groups that will complement the contents developed in the classes. Student participation and discussion will be encouraged.

Evaluation

The evaluation will consist of the weighted average of grades, obtained from the following elements:

Master classes (70%)

There will be 2 exams of the theoretical part, with test-type questions and short answers.

Written test I: 35%

Written test II: 35%

The average of the marks of the written tests I and II must pass the mark of 5 to make the average with the rest of the marks. If it is not passed, the failed exams (<5) will have to be retaken in the second call. This type of assessment will represent 70% of the final grade

Seminars (30%)

The grade will be calculated from the arithmetic mean obtained from the grades obtained by the student in the different activities proposed. Non-attendance without justification will result in a grade of 0 in the seminar. This type of assessment will represent 30% of the final grade

Bibliography

Bibliography

- Hernández Rodríguez, M.; Sastre Gállego, A. *Tratado de Nutrición*. Ed Díaz de Santos, S.A. Madrid, 1999.
- Bellido Guerrero, D.; de Luis Roman, D. A. *Manual de nutrición y metabolismo*. Ed. Díaz de Santos, Madrid, 2006.
- Gil Hernández, A. *Tratado de Nutrición*. Ed. Acción Médica, 2005.
- Challet, E. *Cronobiología. Bases y aplicaciones en la nutrición*. Ed. Panamericana, Madrid, 2012

Interesting articles:

- Garaulet Aza, M., Gómez-Abellán, P. Cronobiología y Nutrición. Avances en Alimentación, Nutrición y Dietética. Edición 2013: 45-46.
- Garaulet M, López-Mínguez J, Gómez Abellán P. Cronobiología y nutrición. Enciclopedia Bases Moleculares de la nutrición II, cap. 20. 2017; 478-479.
- Garaulet M, Ordovás JM, Madrid JA. The Chronobiology, etiology and pathophysiology of obesity. Int J Obes (Lond). 2010; 1667-1683. 6. Laermans J, Depoortere I. Chronobesity: role of the circadian system in the obesity epidemic. Obesity reviews, 17. 2016; 108-125.
- Alvarez, G., Guarnier, F., Requena, T., Marcos, A. Dieta y microbiota. Impacto en la salud. Nutr. Hosp. vol.35 spe 6 Madrid 2018 Epub 06-Jul-2020

Webgraphy:

<https://www.gutmicrobiotaforhealth.com>