



Universitat de Lleida

# **DEGREE CURRICULUM METABOLISM AND NUTRITION**

Coordination: HERNANDEZ JOVER, TERESA

Academic year 2021-22

## Subject's general information

<b>Subject name</b>	METABOLISM AND NUTRITION					
<b>Code</b>	100637					
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION					
<b>Typology</b>	Degree	Course	Character	Modality		
	Bachelor's Degree in Human Nutrition and Dietetics	2	OPTIONAL	Attendance-based		
	Bachelor's Degree in Human Nutrition and Dietetics	4	OPTIONAL	Attendance-based		
<b>Course number of credits (ECTS)</b>	3					
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRAULA		TEORIA		
	<b>Number of credits</b>	1		2		
	<b>Number of groups</b>	1		1		
<b>Coordination</b>	HERNANDEZ JOVER, TERESA					
<b>Department</b>	FOOD TECHNOLOGY					
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.					
<b>Language</b>	Català English (articles)					
<b>Distribution of credits</b>	2 credits masterful activity (classes) 1 credit seminar activity					

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
HERNANDEZ JOVER, TERESA	teresa.hernandez@udl.cat	3	

## 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 include 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 updated.
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 competencies

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. Concept and regulation.
2. Energy intake. Energy values of nutrients
3. Energy bioavailability
4. Glycemic index
5. Energy expenditure. Basal metabolism.
6. Adaptative thermogenesis. Diet-induced thermogenesis .
7. Energy expenditure and physical activity
8. Energy expenditure in different physiological situations. Influence of chronobiology, stress and genetic factors.

## Methodology

### Classes

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

### Seminars

**Seminars are required**, will take place in the classroom. Seminars will include the analysis of scinetific articles and/or search information, complementing the contents developed in class. Stimulate discussion and participation of students.

### Supervised academic work

Academic work will be conducted in groups of 2-3 people, on a issue which must be chosen from a list provided by the professor. Each groupwill present the work and will make a brief presentation in the classroom.

## Evaluation

Evaluation consists of weighted average grades obtained from the following elements:

1. **Written test I** (individual exam): 35%
2. **Written test II** (individual exam): 35%
3. **Seminars**: 15%
4. **Supervised academic work**: 15%

It will have 2 partial exams of theoretical part and seminars, with test and developed questions. Students must pass each partial mark of 5 out of 10. Partial examinations suspended shall be recovered in a new examination.

## Bibliography

### Bibliography

- Hernández Rodríguez, M.; Sastre Gàllego, 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 Mèdica, 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., Guarner, 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>