1. OVERVIEW

Subject Area	Basic Nutrition I
Degree	Bachelor's Degree in Human Nutrition and Dietetics
School/Faculty	School of Biomedical and Health Sciences
Year	2nd year
ECTS	6 ECTS
Type	Compulsory
Language(s)	Spanish
Delivery Mode	On campus and blended
Semester	Semester 3
Coordinating professor	Dr Andrea Calderón García

2. INTRODUCTION

Compulsory subject area in the second year, within the Module 'Nutrition, Dietetics and Health', worth 36 ECTS credits. This module combines the knowledge required in the field of basic nutrition and nutrition adapted to different situations of physiology and disease.

The main objectives of the subject area are:

- To provide basic knowledge of nutrition as a science: classification of nutrients, nutritional functions and importance, food sources, digestion and metabolism, and the consequences for health resulting from a deficiency or excess of these nutrients.
- To learn about and strengthen knowledge of the physiological and biochemical bases of nutrition and metabolism of different nutrients.

In this way, students will obtain a comprehensive perspective that will serve as a basis for their learning and research in different fields of nutrition and dietetics.

3. SKILLS AND LEARNING OUTCOMES

Key skills (CB, by the acronym in Spanish):

- CB2: Students can apply their knowledge to their work professionally and possess the necessary skills, usually demonstrated by forming and defending opinions, as well as resolving problems within their study area.
- CB4: Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB5: Students have developed the learning skills necessary to undertake further study in a much more independent manner.

General skills (CG, by the acronym in Spanish):

- CG12 (D.12) Know about nutrients, their role in the body, bioavailability, requirements and recommendations, as well as the bases of energy and nutritional balance.
- CG13 (D.13) Understand and assess the relationship between food and nutrition in situations of health and situations of illness.
- CG14 (D.14) Apply scientific knowledge of physiology, pathophysiology, nutrition and food to dietary planning and advice for individuals and groups of all ages, including both healthy and unwell people.

Cross-curricular skills (CT, by the acronym in Spanish):

- CT1: Communication: ability to engage in active listening, ask questions and respond in a clear and concise way, as well as to effectively express ideas and concepts. This includes concise and clear written communication.
- CT2: Leadership: ability to offer ideas, approaches and interpretations through strategies which offer solutions to real-life problems.
- CT9: Ability to put knowledge into practice, using the skills acquired in the classroom to mock situations based on real life experiences that occur in the relevant profession.

Specific skills (CE, by the acronym in Spanish):

- CE85: Know the classification, functions and metabolism of nutrients: classification of functions and metabolism.
- CE86: Know the energy requirements of the body. Basal metabolism. Totals required. Modifying factors.
- CE87: Know about the functions, sources, absorption, transport, metabolism and excretion of different nutrients, vitamins and minerals.
- CE88: Understand the nutritional importance, its requirements and sources.

Learning outcomes (RA, by the acronym in Spanish):

- RA1: Demonstrate knowledge of the basis and foundations of human nutrition.
- RA2: Know the nutrients and other components of a diet, their functions and metabolic utilisation.
- RA3: Know the basis of the regulation and balance of energy and nutrition.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
CE85, CE86 CT1, CT2, CT9 CG12, CG14 CB2, CB4, CB5	RA1 Demonstrate knowledge of the basis and foundations of human nutrition.
CE85, CE87, CE88, CE86 CT1, CT2, CT9 CG12, CG13, CG14 CB2, CB4, CB5	RA2 Know the nutrients and other components of a diet, their functions and metabolic utilisation.
CE85, CE87, CE86, CT1, CT2, CT9,CG12 CB2, CB4, CB5	RA3 Know the basis of the regulation and balance of energy and nutrition.

4. CONTENTS

UNIT 1. Nutrition as a science: concept, nutrients, metabolism and energy requirements of the body.

- Topic 1: Nutrition as a science: concept, nutrients and classification.
- Topic 2: Energy requirements of the body and basal metabolism.

UNIT 2. Carbohydrates: absorption, transport, metabolism and excretion. Functions and sources.

- Topic 3: definition of carbohydrates, composition, functions and classification.
- Topic 4: digestive process and metabolism of carbohydrates.
- Topic 5: Dietary fibre: concept, functions, classification, digestion and food sources.

UNIT 3. Proteins: absorption, transport, metabolism and excretion. Functions and sources.

- Topic 6: definition of protein, composition, functions and classification. Quality of protein.
- Topic 7: digestive process and metabolism of proteins.

UNIT 4. Lipids: absorption, transport, metabolism and excretion. Functions and sources.

- Topic 8: definition of lipid, composition, functions and classification. Main sources of lipids and nutritional quality.
- Topic 9: digestive process and metabolism of lipids.

UNIT 5. Water-soluble and fat-soluble vitamins: absorption, transport, metabolism and excretion. Non-nutritional components.

- Topic 10: fat-soluble vitamins: introduction to vitamins. Vitamin A and K.
- Topic 11: vitamin D and antioxidants E and C.
- Topic 12: water-soluble B vitamins.

UNIT 6. Minerals: absorption, transport, metabolism and excretion. Water and its nutritional importance.

- Topic 13: iron and calcium: function, digestion, metabolism and food sources.
- Topic 14: phosphorous, magnesium, zinc, iodine, copper, selenium and manganese: function, digestion, metabolism and food sources.
- Topic 15: sodium, potassium and nutritional importance of water.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Lecture
- Collaborative learning
- Case studies
- Problem-based and project-based learning.
- Learning based on workshops/labs

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Lecture	50h
Independent working	25.5 h
Case studies	10.5 h
Group activities	10.5 h
Written reports and strategies	10.5 h
Workshops and/or lab work	18 h
Tutorials	18 h
Knowledge test	5h
TOTAL	**150 h**

Blended:

Learning activity	Number of hours
Reading of content	13h
Online seminars	13 h
Case studies	10.5 h
Workshops and/or lab work	19 h
Group activities	10 h
Online tutorials	19h
Independent working	49 h
Written reports and strategies	10.5 h
Knowledge test	5h
TOTAL	**150 h**

7. ASSESSMENT

The assessment methods, together with their respective weighting towards the final grade for the subject, are as follows:

On campus:

Assessment method	Weighting
Submission of reports and essays	10%
Laboratory work	20%
Performance observation	10%
Participation in debates	10%
Knowledge tests	50%

Blended:

Assessment method	Weighting
Submission of reports and essays	10%
Laboratory work	20%
Performance observation	10%
Participation in debates	10%
Knowledge tests	50%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities, including the deadlines and assessment procedures for each activity.

8. BIBLIOGRAPHY

The reference work for following this subject area is:

- Gil A (2017). Tratado de Nutrición: bases fisiológicas y bioquímicas de la Nutrición. 3º edición. España: editorial Médica Panamericana.

The recommended bibliography is indicated below:

- Gil Ángel (2017). Tratado de nutrición: nutrición humana en el estado de salud. Tomo IV. España: editorial Médica Panamericana.
- Moreiras O, Carbajal A, Cabrera L, Cuadrado C. Tablas de composición de alimentos. Ediciones Pirámide. Madrid. (19ª ed. Ampliada y revisada) 2019.
- Nelson DL, Cox MM (2018). Principios de bioquímica. 7º edición. España: Lehninger.