

**COURSE DATA****Data Subject**

Code	36367
Name	Nutrition
Cycle	Grade
ECTS Credits	6.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1212 - Degree in Gastronomic Sciences	Faculty of Pharmacy and Food Sciences	2	First term

Subject-matter

Degree	Subject-matter	Character
1212 - Degree in Gastronomic Sciences	10 - Nutrition and dietetics	Obligatory

Coordination

Name	Department
BARBA ORELLANA, FRANCISCO JOSE	265 - Prev. Medicine, Public Health, Food Sc., Toxic. and For. Med.

SUMMARY

In the present Degree in Gastronomic Sciences curriculum, "NUTRITION" is a basic subject of half-yearly basis. It is taught in the first semester of the second year. It consists of 6 ECTS credits.

The subject "NUTRITION" is intended to provide knowledge about different concepts related to nutrition and nutritional needs. Moreover, recommended dietary intakes, nutritional goals and dietary guidelines will be evaluated and discussed.

In addition, nutrient's digestion, absorption, distribution and use by human being will be studied. The dietetic sources as well as the impact of nutrient deficiency and/or excess on health will be also studied.

Summarizing, the objectives of the course are:



To gain experience in the assessment of methods to evaluate the nutritional status of individuals and communities. To know the different evaluation methods to establish food consumption at individual, household and national levels. And delve into the errors and myths of nutrition and food.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

It is recommended to previously have good knowledge about the subjects Physiology and Biological Chemistry and Biochemistry

OUTCOMES

1212 - Degree in Gastronomic Sciences

- Know about nutrients, their function in the organism, bioavailability, needs and recommendations, and the basis of energy and nutritional balance.
- Have knowledge and understanding in the field of gastronomic sciences.

LEARNING OUTCOMES

By conducting this course, the students should acquire the following skills and abilities:

- To learn the basics of energy and nutritional balance and the foundation of a healthy feeding in order to establish a balanced, varied diet and enough food and meet different patterns and eating habits.
- To know the feeding and modifications to be made in special situations, seeing metabolic adaptations and food and nutrition specific needs.
- To know the key aspects of the functioning of the main sectors within the collective restoration and recommendations to better play its food and social role in the field of community nutrition and public health.

DESCRIPTION OF CONTENTS



1. INTRODUCTION AND CONCEPTS

Theme 1. FOOD AND NUTRITION. Concepts. Goals. Related matters. Past, present and future. Information and bibliographic sources. Role of Graduate in Gastronomic Sciences as a Nutrition professional

2. NEEDS AND RECOMMENDATIONS

Theme 2. ENERGY NEEDS. Basal metabolism and energy expenditure: Determinants. Human body energy requirements and recommendations. Quantification methods. Food's caloric value.

Theme 3. NUTRITIONAL RECOMMENDATIONS. Recommended and reference dietary. Food composition tables.

Theme 4. OBJECTIVES AND NUTRITIONAL DIETARY GUIDELINES. Characteristics. Process development, implementation and evaluation. National and international models.

3. ENERGY AND NUTRIENTS

Theme 5. NUTRIENT'S ENERGY. Methods of quantifying food energy value.

Theme 6. LIPIDS. Nutritional classification. Functions and use by human body. Dietary sources. Fatty acid types. Unsaponifiable components. Needs and recommendations. Related pathology.

Theme 7. PROTEIN. Nutritional classification. Functions and use by human body. Dietary sources. Evaluation of the nutritional quality of proteins. Types of amino acids. Needs and recommendations. Related pathology.

Theme 8. CARBOHYDRATE. Nutritional classification. Functions and use by the human body. Dietary sources. Needs and recommendations. Related pathology.

Theme 9. Water and electrolytes. Nutritional importance of water. Functions, requirements, recommendations and sources.

Theme 10. WATER SOLUBLE VITAMINS. Vitamin C and vitamin B complex functions. Utilization. Dietary sources and recommendations. Related pathology.

Theme 11. FAT-SOLUBLE VITAMINS. Functions. Utilization. Dietary sources and recommendations. Related pathology.

Theme 12. MINERALS. Introduction. Functions. Utilization. Dietary sources and recommendations. Related pathology.

Theme 13. TRACE ELEMENTS. Introduction. Functions. Utilization. Dietary sources and recommendations. related pathology.

4. OTHER FOOD INGREDIENTS

Theme 14. DIETARY FIBER. Concept. Components and classification. Biological functions. Needs and recommendations. Dietary sources. Related pathology

Theme 15. Food bioactive compounds. Concept and classification. Sources. Biological effects.

Theme 16. Alcohol. Absorption, metabolism and effects. Recommendations. Sources and nutritional impact.

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Laboratory practices	10,00	100
Computer classroom practice	5,00	100
Study and independent work	90,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

Regarding the methodology used for the development of the subject, the structure is as follows:

a) Lectures: they will be carried out in weekly sessions of one hour. In total there will be required 40 sessions of one hour to cover this facet teaching. Computer presentations and other innovative means that could be relevant will be used. Punctually slate will be used.

The approach of problems solved and unsolved will be held. Presentation of practical cases of nutritional consultation. Consultation of literature books available in library. The working material will be available at the beginning of each topic outline or summary.

b) Practical laboratory sessions: Are compulsory. During the session, there will be laboratoty notebook "Laboratory notebook" with a small theoretical introduction of the topics covered and the detailed protocols. During each session the student must complete the lab notebook according to comments previously established by the teacher.

c) Seminars: Realization and compulsory attendance for students who are enrolled. They should be prepared in groups of 4 or 5 students, each of which will present a topic to be held during the seminar (written work and oral presentation of 20 minutes). The exhibitions will be held in two days of seminars. The work must be delivered to tutor electronically and on paper and must contain the following documents:

c.1) The work of the presentation should have a length between 10 and 20 pages, and a recommended bibliography that allows, if the student so desires deeper into the subject.

c.2) Power Point Presentation.

c.3) The works will be presented publicly during the seminars. In the exhibition all group members must actively participate. At the end, a discussion with the participation of all seminar attendees will be established.

In short, teaching techniques include:



Theoretical sessions including practical case studies

Practical laboratory sessions

Computer practical sessions

Elaboration, presentation and discussion of current issues (coordinated Seminars)

Specialized tutorials

Audiovisual: scientific videos and current affairs programs

Others (specify):

Attendance at Conferences and Workshops taught by specialized professionals.

Attendance to specific workshops organized by various associations

During the activities, both theoretical and practical, examples of the applications of the contents of the subject in relation to the Sustainable Development Goals (SDG) will be indicated, as well as in the proposals of topics for the non-coordinated seminars. This is intended to provide students with knowledge, skills and motivation to understand and address these SDGs, while promoting reflection and criticism.

Training students in a transversal way in all subjects with the integration of the three dimensions of sustainable development: economic, social and environmental, prioritizing the fight against poverty and hunger, with a strong anchor in the defense of the human rights, gender equality and the empowerment of women, together with the elimination of unsustainable consumption patterns.

EVALUATION

Practical work, seminars and tutorials are **COMPULSORY** to pass the subject.

The proportion of the different assessable activities on the final established mark will be: theoretical-practical (70%), continuous assessment (activities in classes and online tests (5%), non-coordinated seminars (10%) and practicals (memory-cards) (15%).

A minimum grade of 5 out of 10 in each of the teaching activities assessed to compensate the remaining note is required.

The subject is overcome when the subject specific skills (minimum overall mark 5/10) are acquired.

REFERENCES



Basic

- Referencia b1: Gil-Hernández, A. (2017) Tratado de nutrición (5 Tomos): T1. Bases Fisiológicas y Bioquímicas de la Nutrición, T2. Composición y calidad nutritiva de los alimentos, T3. Nutrición Humana y en el estado de salud, T4. Nutrición Clínica, T5. Nutrición y Enfermedad. (3ª ED). Editotrial Médica Panamericana.
- Referencia b2: Barba, F.J., Saraiva, J.M.A., Cravotto, G., Lorenzo, J.M. (2019). Innovative thermal and non-thermal processing, bioaccessibility and bioavailability of nutrients and bioactive compounds. 1st Edition. Woodhead Publishing. ElSevier. ISBN: 9780128141748.
- Referencia b3: CESNID (2008). Tablas de composición de alimentos por medidas caseras de consumo habitual en España. Ed McGraw-Hill, Madrid.
- Referencia b4: Mataix Verdu J (2009). Nutrición y alimentación humana (2 tomos). Ed. Ergen. Madrid.
- Referencia b5: Barba, F.J., Mariutti, L.R.B., Bragagnolo, N., Mercadante, A.Z., Barbosa-Cánovas, G.V., Orlie, V. (2017). Bioaccessibility of bioactive compounds from fruits and vegetables after thermal and nonthermal processing. Trends in Food Science and Technology Volume 67, September 2017, Pages 195-206.

Additional

- Referencia c1: Cervera P, Clapés J, Rigolfas R (2004). Alimentación y dietoterapia (Nutrición aplicada en la salud y la enfermedad). 4ª edición, Ed. Interamericana McGraw-Hill. México
- Referencia c2: Martínez, J.A. (2000). "Fundamentos Teórico-Prácticos de Nutrición y Dietética", McGraw-Hill. Madrid, España.
- Referencia c3: Serra L., Aranceta J. Nutrición y Salud Pública. 2ª Ed. Masson. Barcelona. (2006).