



Universitat de Lleida

DEGREE CURRICULUM **BROMATOLOGY**

Coordination: MACIA PUIG, MARIA ALBA

Academic year 2023-24

Subject's general information

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|---|---|---------------|------------------|------------------|
| Subject name | BROMATOLOGY | | | |
| Code | 102765 | | | |
| Semester | 1st Q(SEMESTER) CONTINUED EVALUATION | | | |
| Typology | Degree | Course | Character | Modality |
| | Double bachelor's degree: Degree in Human Nutrition and Diethetics and Degree in Physiotherapy | 2 | COMPULSORY | Attendance-based |
| Course number of credits (ECTS) | 9 | | | |
| Type of activity, credits, and groups | Activity type | PRALAB | PRAULA | TEORIA |
| | Number of credits | 1.8 | 2.7 | 4.5 |
| | Number of groups | 1 | 1 | 1 |
| Coordination | MACIA PUIG, MARIA ALBA | | | |
| Department | FOOD TECHNOLOGY, ENGINEERING AND SCIENCE | | | |
| Important information on data processing | Consult this link for more information. | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|------------------------|--------------------|---------------------------|------------------------------|
| MACIA PUIG, MARIA ALBA | alba.macia@udl.cat | 9 | |

Subject's extra information

Bromatology is the science dedicated to the study of food, its components and its characteristics. In this course the student acquires knowledge about the characteristics of the different food groups, the raw materials and the products made in the food industry. These foods are studied from different perspectives: composition, structure, properties, nutritional value, toxicological aspects, conservation, transformation, etc., so that the student can use this knowledge as tools with which to apply the criteria and recommendations of the Nutrition and Dietetics.

Learning objectives

Identify and classify food

1. Differentiate the concepts of Food, Bromatology, Food Technology, Nutrition and Dietetics.
2. Classify foods according to different criteria.

Knowing its composition

3. Recognize the composition, properties and nutritional value of different foods.
4. Describe the physical-chemical properties, the organoleptic characteristics, the nutritional value and the quality of the food.
5. Describe the changes that food undergoes as a result of technological and culinary processes.
6. Describe food production and recovery of food waste.
7. Carry out the physical-chemical and organoleptic analysis of food.
8. Express and communicate the importance of food components in the field of health.

Interpret databases and composition tables

9. Distinguish between databases and food composition tables.
10. Carry out the computer search in food composition databases.
11. Compare and assess search results in databases and composition tables.
12. Determine the nutritional value of a food using bases and composition tables.
13. Prepare reports on the composition and nutritional value of a food.

Competences

Specific Competences:

- CE8 Identify and classify food, food products and food ingredients.
- CE9 Know its chemical composition, its physical-chemical properties, its nutritional value, its bioavailability,

its organoleptic characteristics and the changes it undergoes as a result of technological and culinary processes.

- CE12 Interpret and manage databases and food composition tables.

General Competencies:

- CG3. Recognize one's own limitations and the need to maintain and update professional competence, giving special importance to autonomous and continuous learning of new knowledge, products and techniques in nutrition and food, as well as motivation for quality.
- CG4. Communicate effectively, both orally and in writing, with people, health or industry professionals and the media, knowing how to use information and communication technologies, especially those related to nutrition and life habits.
- CG5. Know, critically assess and know how to use and apply information sources related to nutrition, food, lifestyles and health aspects.

Basic Competences:

- CB2 That students know how to apply their knowledge to their work 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 area of study.
- CB3 That students have the ability to gather and interpret relevant data (normally within their area of study) to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature.
- CB4 That students can transmit information, ideas, problems and solutions to both specialized and non-specialized audiences.
- CB5 That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Transversal Competences of the UdL:

- CT1 Have correct oral and written expression.
- CT3 Master ICT.
- CT5. Acquire essential notions of scientific thought.

Subject contents

UNIT 1. Introduction

Concept of food, bromatology, nutrition and dietetics.

UNIT 2. Food

Food classification. Food components. Nutritional value and caloric value of food. Alteration of food. Food quality.

UNIT 3. Basic foods of plant origin

Fruits and vegetables. Cereals and derivatives. Legumes. Nuts and derivatives.

UNIT 4. Basic foods of animal origin

Milk and milk products. Eggs and derivatives. Meat and meat products. Fish, seafood and derivatives.

UNIT 5. Complementary foods

Olis and edible fat. Natural sweeteners and derivatives. Stimulant food products. Condiments and spices. Water and non-alcoholic beverages. Alcoholic drinks.

UNIT 6. Special foods and dietary supplements

Infant food. Foods for weight control. Dietary supplements

UNIT 7. New foods

Transgenic foods. Functional foods.

Methodology

To achieve the objectives and acquire the assigned skills, the following activities will be scheduled:

| ACTIVITY | OBJECTIVE | DESCRIPTION |
|------------------------|-------------------|---|
| Master classes | 1-7, 10 | Acquisition of knowledge about composition, properties, bioavailability, nutritional value, and food quality control. Valorization of food by-products. |
| Seminaris | 3, 5, 6, 7, 10-14 | Packaging and labeling, properties and modifications of foods, functional foods, and bioavailability Search food databases. Training in the use and interpretation of food composition databases. |
| Tutories | 9, 14 | Guide learning by clarifying doubts about the contents of the subject. |
| Pràctiques laboratoris | 8, 13 14 | Practices in the laboratory on properties, modifications and composition of foods. |
| Treballs dirigits | 5, 6, 7, 9 | Academically directed work to achieve the objectives of ability in synthesis and oral expression. |

Development plan

Master classes

They will be carried out with all the students in the classroom. Their purpose is to give an overview of the educational content related to the specific knowledge of the subject, highlighting those aspects that are related to the acquisition of skills related to food science.

Directed works

they will be in groups. Search for information on food components and their scientific interest in the field of health.

Seminars

In the seminars, activities will be carried out that provide practical knowledge on some of the topics developed in the master classes.

Laboratory practices

The laboratory practices will be carried out in groups of 10 students who will be subdivided into groups of 2 students. Practice sessions will be held for two days. Active participation in practice sessions is considered essential for learning the subject. Activities related to the composition and properties of food will be carried out:

It is MANDATORY that students bring to the practices a labcoat

Tutorials

Seminar-Tutoring. It will be carried out in groups of 4-6 students and will take place after the laboratory practices. Its purpose will be to clarify doubts about the elaboration of laboratory practice reports and the performance of the work.

Evaluation

The assessment will consist of the weighted average of 4 grades, obtained from the following modules:

BLOCK 1: Exams (50%)

There will be 2 partial exams of the theoretical part, with multiple choice and short-answer questions.

- **Exam I: 25%**
- **Exam II: 25%**

The average of the qualifications of the exams I, and II must be higher than 5 to do the average with the rest of qualifications. If the student doesn't pass the exams (<5), the person has to retake the failed exams in a second call. In this second call, the maximum score that can be achieved is a 5.

BLOCK 2: Activities proposed in seminars (20%)

The mark will be calculated based on the arithmetic average obtained from the qualifications obtained by the student in the different activities.

BLOCK 3: Course work (10%)

A group work will be evaluated. The topic and the guidelines will be facilitated by the teacher. The mark of the work will correspond to the evaluation of the report presented by the group and the oral presentation of the work.

BLOCK 4: Laboratory practices (10%)

They will be carried out in groups. The active participation in the sessions and the delivery of a small group report will be valued.

If someone takes the alternative assessment, this will consist of 2 exams on the dates established by the center, which will weigh 80% of the overall grade of the subject, as well as the delivery of the course work (10%) and the implementation of the practices (10%).

Bibliography

Books

- Astiasaran, I.; Martinez, J.A. Alimentos. Composición y propiedades. Editorial MacGraw Hill Interamericana. 2003.
- Bello, J. Ciencia bromatológica. Principios generales de los alimentos. Editorial Díaz de Santos. Barcelona. 2000.
- Código Alimentario Español y disposiciones complementarias. Editorial Tecnos. Madrid. 2002.
- Coultate, T.P. Manual de química y bioquímica de los alimentos. Editorial Acribia. Zaragoza. 2007.
- Fennema, O.R. Química de los Alimentos. Editorial Acribia. Zaragoza. 2010.
- Kuklinski, C. Nutrición y bromatología. Editorial Omega. Barcelona. 2003.
- Salinas, R.D. i al. Alimentos y nutrición: introducción a la bromatología. Editorial El Ateneo. Buenos Aires. 2000.