



Information about the subject

Degree: Bachelor of Science Degree in Human Nutrition and Dietetics

Faculty: Faculty of Medicine and Health Sciences

Code: 1310201 **Name:** Bromatology

Credits: 6,00 **ECTS Year:** 2 **Semester:** 1

Module: Food Science Module

Subject Matter: Bromatology **Type:** Compulsory

Department: Nutrition

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Food Science Module

Subject Matter	ECTS	Subject	ECTS	Year/semester
Bromatology	6,00	Bromatology	6,00	2/1
Food Technology	6,00	Food Technology	6,00	2/1
Culinary Technology	6,00	Culinary Technology	6,00	3/1
Microbiology	6,00	Microbiology and Parasitology	6,00	1/2
Toxicology	6,00	Food Toxicology	6,00	2/2

Recommended knowledge

Not established



Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Understand and assimilates the concepts included in the content of the course.
- R2 Shows ability to solve problems related to these contents using different resources.
- R3 Demonstrates ability to work in a laboratory performing correctly the basic operations and observing the corresponding security rules. As well as a correct understanding of the planning, development and purpose of the experience.
- R4 Understands and adequate uses language, as well as correct writing and presentation of data.
- R5 Collaborates with the teacher and colleagues throughout the learning process: Attendance to theoretical, practical or tutoring sessions; teamwork; respect in the treatment; compliance with the rules of organization of the subject for the benefit of all.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC	Weighting			
	1	2	3	4
CB3 Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgements that include reflection on relevant social, scientific or ethical issues.				X

GENERAL	Weighting			
	1	2	3	4
CG08 Students identify and classify food and food products. Students know how to analyse and determine their composition, properties, nutritional value, bioavailability of nutrients, organoleptic characteristics and the modifications they undergo as a result of technological and culinary processes.				X
CG09 Students know the basic processes in the elaboration, transformation and conservation of foods of animal and vegetable origin.				X

SPECIFIC	Weighting			
	1	2	3	4
CE10 Identify and classify foods, food products and food ingredients.				X
CE11 To know their chemical composition, their physical-chemical properties, their nutritional value, their bioavailability, their organoleptic characteristics and the modifications they undergo as a result of technological and culinary processes.				X
CE13 Students know and apply the fundamentals of bromatological and sensory analysis of food products.				X
CE14 Students interpret and manage the databases and tables of food composition.				X



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Course guide

Year 2024/2025
1310201 - Bromatology





Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R5	5,00%	Evaluation of the use of the practical classes in the classroom, of problems or computers, seminars and tutorials. Through attendance, and participation in the different activities proposed.
R1, R2, R4	65,00%	Written evaluation of the knowledge and skills obtained. The test may consist of a series of open-ended or multiple-choice questions on the theoretical content of the subject and/or practical exercises (problem solving).
R1, R3, R4	15,00%	Assessment of practical laboratory work, or laboratory culinary techniques workshop, through which the competencies acquired must be demonstrated and that they are capable of being used to solve the different situations and problems that arise in a laboratory; this assessment may be carried out by one of the following methods, or a combination of several of them: an individual written test, the individual or group performance of a laboratory experience, the submission of an individual or group report on the work carried out in the laboratory
R3, R5	15,00%	Evaluation of individual or group practices or activities, in which information related to each of the subjects must be sought and structured, and cases or problems resolved. This is done through a system of continuous evaluation throughout the course, which involves the delivery and / or exposure of work, whose objectives and content will be proposed by the teacher.

Observations

* The individual written theory test will consist of a written exam (development + multiple-choice test (70-90 questions) (65%). A minimum mark of 5 in each of the parts (practical and theory) is



required to pass the course and to average it.

** It is necessary to pass the practical exam in order to pass the subject.

*** Attendance to the practicals, as well as the delivery of dossiers is compulsory. In order to be able to take the written exam, it will be necessary to have passed the practical exam, as well as the delivery of the corresponding dossiers.

During the academic year, there will be a continuous evaluation of the activities carried out, such as questionnaires, summaries, presentations, etc.

MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 Exposition of contents by the teacher, analysis of competencies, explanation and demonstration of capacities, skills and knowledge in the classroom. The blackboard, the computer and the cannon will be used to display texts, graphics, etc.
- M3 Resolution of practical exercises and case studies, analysis of evaluation procedures and procedural intervention. All this with the support of the teacher. This aspect can be controlled through attendance and active participation in the practical sessions.
- M4 Monographic sessions throughout the course, oriented towards current aspects and applications of the subject.
- M5 Student study: individual preparation of readings, essays, problem solving, seminars, papers, reports, etc. for discussion or delivery in electronic format.



- M6 Application and sharing of multidisciplinary knowledge This is the resolution of a problem that in its subsequent professional practice would require the application of skills acquired through the development of the modules and that would produce synergies in the assimilation of transversal and specific skills. Group work competences will be specifically evaluated.
- M8 A set of tests, written or oral, used in the evaluation of the student.
- M9 Group preparation of readings, essays, problem solving, seminars, papers, reports, etc... for discussion or delivery.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons M1	R1, R2, R3, R4, R5	39,00	1,56
Laboratory M3	R3, R4, R5	15,00	0,60
Seminar M4	R5	2,00	0,08
Office Hours M3	R1, R5	2,00	0,08
Evaluation M8	R1, R2, R3, R4	2,00	0,08
TOTAL		60,00	2,40

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Autonomous work M5	R1, R2, R3, R4, R5	80,00	3,20
Group work M9	R1, R2, R3, R4, R5	10,00	0,40
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Part 1: Introduction to the Bromatology. Concepts General.	Unit 1. Introduction to Bromatology. Food, nutrient. Edibility and quality. Sampling.
Part 2. Hydrocarbon foods.	Unit 2. Cereals chemistry. Unit 3. Legumes. Unit 4. Vegetables. Edible mushrooms Unit 5. Fruits and nuts. Unit 6. Sweeteners.
Part 3: Protein. foods	Unit 7. Eggs and egg products. Unit 8. Milk and derived products. Unit 9. Meat and derivatives. Unit 10. Fish and seafood.
Part 4. Lipid foods	Unit 11. Oils and edible fats.
Part 5. Other foods.	Unit 12. Stimulants, condiments, spices. Unit 13. Water. Unit 14. Drinks bromatology. Topic 15. Chemistry of emerging foods in the society of the 20th century
Part 6. Analysis of major components in foodstuffs	Unit 16. Common analytical parameters in food.
Part 7. Laboratory practice	There will be four practices linked to the knowledge area.
Part 8. Bromatology problems	Several sessions will be devoted to explaining and solving problems related to the area of knowledge



Temporary organization of learning:

Block of content	Number of sessions	Hours
Part 1: Introduction to the Bromatology. Concepts General.	2,00	4,00
Part 2. Hydrocarbon foods.	6,00	12,00
Part 3: Protein. foods	6,00	12,00
Part 4.Lipid foods	2,00	4,00
Part 5.Other foods.	4,00	8,00
Part 6. Analysis of major components in foodstuffs	2,00	4,00
Part 7. Laboratory practice	5,00	10,00
Part 8.Bromatology problems	3,00	6,00



References

BASIC BIBLIOGRAPHY

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- BELITZ, H.D., GROSCH W., SCHIEBERLE, P. (2012). Química de los alimentos. 3ª ed. Zaragoza: Ed. Acribia.
- BELLO GUTIÉRREZ, J. (2000). Ciencia bromatológica. Principios generales de los alimentos. Madrid: Ed. Díaz de Santos.
- FENNEMA O. (2010) Química de los alimentos. Ed. Acribia. Zaragoza.
- GIL HERNANDEZ A. (2017) Tratado de Nutrición. Tomo 2. Composición y Calidad Nutritiva de los alimentos. Ed. Médica Panamericana. Madrid.
- HERNANDO, I., LARREA, V., LLORCA, E., LLUCH, M.A., PUIG, A., QUILES A. (2001). Prácticas de composición química de los alimentos. Valencia: Ed. Universidad Politécnica de Valencia.
- KUBALLA, T., & DEAN, L. L. (2022). Encyclopedia of food chemistry. Academic Press.S.A.
- KUKLINSKI, C. (2003). Nutrición y bromatología. Barcelona: Ed. Omega.
- MENDOZA, E., CALVO, M.C. (2010). Bromatología: Composición y propiedades de los alimentos. Ed. McGraw-Hill Interamericana.
- PRIMO YÚFERA, E. (1997). Química de los alimentos. Madrid: Ed. Síntesis.
- PUIG, A, PÉREZ-MUÑUERA, I, HERNANDO, I. (2000). Apuntes de composición química de los alimentos. Valencia: Ed. Universidad Politécnica de Valencia.
- VELISEK, J. (2014). The chemistry of food (2014). Ed. Wiley-Blackwell

COMPLEMENTARY BIBLIOGRAPHY

- FERNÁNDEZ, I., ESCRICHE, I., SERRA, J.A. (2001). Prácticas de análisis y control de calidad de alimentos. Valencia: Ed. Universidad Politécnica de Valencia.
- BELTRÁN, M.C., MOLINA, P. (2001). Prácticas de análisis de leche. Valencia: Ed. Universidad Politécnica de Valencia.

MANUSCRIPTS PUBLISHED IN INDEXED JOURNALS IN THE JOURNAL CITATION REPORTS ON THE MATTER.



Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

Microsoft Teams

Kaltura



Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

Microsoft Teams

Kaltura

Explanation about the practical sessions:

The practices will be carried out according to what is established in the course guide.

All practices will be done through TEAMS. This medium will be used to explain the practice, view videos and resolve any doubts that may arise in the time established for its preparation. The delivery of the dossiers will be carried out as planned at the beginning of the course.



2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System: