COURSE DESCRIPTION

COURSE DETAILS

Title (of the course): **BROMATOLOGÍA DESCRIPTIVA**
Code: 102222
Degree/Master: **GRADO DE CIENCIA Y TECNOLOGÍA DE LOS ALIMENTOS** Year: 2
Name of the module to which it belongs: CIENCIAS DE LOS ALIMENTOS
Field: ANÁLISIS DE ALIMENTOS Y BROMATOLOGÍA
Character: OBLIGATORIA
Duration: SECOND TERM
ECTS Credits: 6.0
Classroom hours: 60
Face-to-face classroom percentage: 40.0%
Study hours: 90
Online platform: https://www.ucomoodle.es

LECTURER INFORMATION

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PREREQUISITES AND RECOMMENDATIONS

Prerequisites established in the study plan

Students must have at least a B-1 level of English

Recommendations

It would be convenient if the student had previously taken the subjects corresponding to the Common Basic Training module, especially Physiology, Chemistry and Biochemistry

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INTENDED LEARNING OUTCOMES

CB3	Students must possess the capacity to gather and interpret relevant information (usually in their field of study) in order to give opinions which include a reflection about relevant topics which are social, scientific or ethic in nature.
CB4	Students must transmit information, ideas, problems and answers to both specialised and not specialised publics.
CU2	To know and improve the user level in the field of ICT.
CT1	Ability to express themselves correctly in the Spanish language in their disciplinary field.
CT7	Ability for analysis and synthesis.
CT8	To develop a critical reasoning.
CT9	To develop skills in research initiation.
CE2	To know the food production models, their composition and physical, physico-chemical and chemical properties to determine their nutritive and functional value.

OBJECTIVES

-To provide students basic knowledge on chemical and structural food composition of major groups of food products, both from animal andvegetal origin. To describe the establishment and relationship between these characteristics and different food quality criteria (nutritional andmarket value)
- To introduce students in the knowledge of compositional food elements, whose determination will be used for food analysis. This workingelement will allow quantify the food/quality relationship and how processing conditions affect
- To train students on the basis of legislation and analytical methodology to be followed in the food quality field.- To improve students`communication and application of knowledge in a future career individually or within a team, both in mother tonguelanguage and in a foreign language

CONTENT

1. Theory contents

PART I: MILK AND DAIRY PRODUCTS (6h)

- Chemical composition of milk. Structure of milk components.
- Types of milk and characteristics. Milks of immediate consumption. Preserved milks. Fundamental principles for their preparation. Standards of quality and nutritional value.
- Special types of milks. Fundamental principles for their preparation.
- Dairy products. Butter and cream. Chemical composition. Fundamental principles for their preparation. Standards of quality and nutritional value
- Other dairy products: ice cream, milk serum, casein, curds. Chemical composition. Fundamental principles for their preparation. Standards of quality and nutritional value.

PART II: FISH AND FISHERY PRODUCTS (6h)

- Structure, composition and nutritional value of fish.
- Structure, composition and nutritional value of shellfish species of nutritional interest. Fundamental principles for their depuration.
- Methods for determining the fish and shellfish freshness. Postmortem changes.
- Fishery-by products: surimi, semi, canned, pickled, salted, dried, smoked, fermented. Fundamental principles and nutritional value.

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PART III: MEAT AND MEAT PRODUCTS (9-10h)

- The carcass as a structural unit. The quality of the carcass. Factors that determine the chemical composition of the carcass. Types and classification processes.
- Myofibrillar Systems. Major muscle tissues integrating muscular system of the carcass. Muscular contraction mechanism. Conversion of muscle to meat. Rigor Mortis. Enzyme action: maturation.
- Chemical composition of meat and nutritional value. Factors that modify the chemical composition of meat. Factors to consider in the determination of meat quality. PSE and DFD meats; Causes and prevention and its impact as raw materials unsuitable for meat products industry.
- Characteristics and properties of meat emulsions. Scalded sausages. Meat extracts. Gelatins. Quality factors.
- Characteristics and properties of the raw-cured meat products. Fundamentals of curing process. Parameters that define the quality of the raw-cured meat products

PART IV: FRUITS AND VEGETABLE PRODUCTS (9 -10h)

- Plant foods. Classification, chemical composition and importance in the diet. Senescence of plant materials. Endogenous factors enabling quality assessment. Changes in the structure and chemical composition during maturation and post-harvest period. - Minimally processed vegetables. Determination of the adequacy of raw materials for the transformation processes. - Vegetable protein foods of interest. Legumes. Chemical composition of the main species. Chemical quality indicators. - Cereal foods. Classification and nutritional value. Flours and derived products. Chemical quality indicators. Bread. Pasta. Determination of adequacy of flours for bread-making. Technological implications of proteins and sugars in bread and pasta-making processes. - Fruits and vegetables. Classification and nutritional value. - The importance of plant fibre in the diet. Root crops foods of interest. Classification and nutritional value. - Vegetable oils. Classification and chemical composition. Nutritional value and culinary and industrial applications. Changes during the process of preparation of fats and fatty products. Margarines. - Sugars and derivatives. Classification and chemical composition. Importance in the diet. Syrups. Confectionery products.

2. Practical contents

SEMINARS

- Honey products
- Omega fatty acids
- Water and beverages
- Eggs and egg products
- Types of cheeses
- Classification of meat products
- Dairy fermented products

LABORATORY SESSIONS

- Properties of modified food starches
- Properties of food emulsions and formation and stability of food foams

SUSTAINABLE DEVELOPMENT GOALS RELATED TO THE CONTENT

Zero hunger
Good health and well-being
Gender equality
Industry, innovation and infrastructure
Responsible consumption and production

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METHODOLOGY

General clarifications on the methodology (optional)

Consider each case in particular

Methodological adaptations for part-time students and students with disabilities and special educational needs

Consider each case in particular by means of supporting documents or supporting documentation

Face-to-face activities

Activity	Large group	Medium group	Small group	Total
Assessment activities	3	-	-	3
Lab practice	-	-	6	6
Lectures	30	-	-	30
Seminar	-	21	-	21
Total hours:	***33***	***21***	***6***	***60***

Off-site activities

Activity	Total
Analysis	10
Exercises	10
Information search	10
Reference search	10
Self-study	50
Total hours	***90***

WORK MATERIALS FOR STUDENTS

Coursebook
Dossier
Lessons summary
Oral presentations
Placement booklet
References

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EVALUATION

Intended learning	Document Analysis	Exams	Laboratory Practice
CB3	X		X
CB4	X		X
CE2	X	X	X
CT1	X	X	X
CT7	X	X	X
CT8	X	X	X
CT9	X		X
CU2	X	X	X
Total (100%)	***20%***	***60%***	***20%***
Minimum grade	***5***	***5***	***5***

(*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

Method of assessment of attendance:

The attendance will be valued on the final grade of the subject (5% of the 25% of the activities in theory)

General clarifications on instruments for evaluation:

The active participation in the subject by the student will be considered, obtaining an extra score over the final grade

The validity time of each evaluation method will be of an academic year i

Clarifications on the methodology for part-time students and students with disabilities and special educational needs:

Each particular case will be taken into account by means of a supporting document or supporting document

Clarifications on the evaluation of the extraordinary call and extra-ordinary call for completion studies:

The evaluation of repeaters in both exams will be 100% of the weight in the final exam, having taken 80% of the practical sessions in previous years.

First-time students in the extraordinary exam will be subject to what is stated in the general clarifications.

The extraordinary call in September is for students who have consumed, at list, one call, in the current course or in previous courses. The evaluation will be for contents and criteria show in the teaching guide of the subject.

In the case of the extraordinary call for completion of studies, to pass the subject it is necessary to pass a final exam on the theoretical and practical contents of the same included in the teaching guide of the previous course.

In any of these calls, it is necessary to obtain a mark equal to or greater than 5 in the final exam to pass the

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subject.

Qualifying criteria for obtaining honors:

Each particular case will be considered from a grade of 9

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1. Basic Bibliography

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Páginas web de interés

- Boletín Oficial del Estado: http://www.boe.es
- Codex Alimentarius: http://www.fao.org/fao-who-codexalimentarius/es/
- Food and Agriculture Organization of United Nations (FAO): http://www.fao.org
- Organización Mundial de la Salud (OMS): https://www.who.int/es
- European Food Safety Authority (EFSA): http://www.efsa.europa.eu
- Agencia Española de Consumo, Seguridad Alimentaria y Nutrición: http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan_inicio.htm
- Ministerio de Agricultura, Pesca y Alimentación: https://www.mapa.gob.es/es/
- Ministerio de Sanidad y Consumo: http://www.msc.es
- El Portal de la Unión Europea: http://europa.eu/index_es.htm
- Confederación de Consumidores y usuarios: http://www.seguridadalimentaria.org
- Fundación Alimentum: http://www.fundacionalimentum.org/materiales/adultos
- BEDCA: http://www.bedca.net/bdpub/index.php

2. Further reading

COORDINATION CRITERIA

Common evaluation criteria
Tasks deadlines
Tasks performance

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SCHEDULE

Period	Assessment activities	Lab practice	Lectures	Seminar
1# Fortnight	0,0	0,0	6,0	3,0
2# Fortnight	0,0	3,0	4,0	3,0
3# Fortnight	0,0	3,0	4,0	3,0
4# Fortnight	0,0	0,0	4,0	3,0
5# Fortnight	0,0	0,0	4,0	3,0
6# Fortnight	0,0	0,0	4,0	3,0
7# Fortnight	0,0	0,0	4,0	3,0
8# Fortnight	3,0	0,0	0,0	0,0
Total hours:	***3,0***	***6,0***	***30,0***	***21,0***

The methodological strategies and the evaluation system contemplated in this Course Description will be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required.