

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

Code	33983
Name	Bromatology
Cycle	Grade
ECTS Credits	10.5
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. Period
1103 - Degree in Food Science and Technology	Faculty of Pharmacy and Food Sciences	2 Annual

Subject-matter

Degree	Subject-matter	Character
1103 - Degree in Food Science and Technology	11 - Bromatology	Obligatory

Coordination

Name	Department
BARBERA SAEZ, REYES	265 - Prev. Medicine, Public Health, Food Sc., Toxic. and For. Med.

SUMMARY

This subject has two blocks:

-Basic concepts related to: a) Terminology of the subject: Bromatology, food-nutrient, feeding-nutrition, nutritional value; b) Types of foods: functional, new foods and food supplements; c) Quality of foods and legislative aspects

-Study of the different food groups (animal and plant origin, beverages and others) regarding the following aspects: composition, properties and quality parameters.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Biology, General and Organic Chemistry and Biochemistry

To enrol simultaneously other subject of module of Food Sciences such as Food Chemistry and Food Technology.

OUTCOMES

1103 - Degree in Food Science and Technology

- Capacidad de interpretar datos relevantes.
- Develop skills to undertake further study.
- The ability to transmit ideas, problems and solutions within this study area and to communicate the knowledge acquired.
- Know how to apply that knowledge to the professional world contributing to the development of human rights, democratic principles, the principles of equality between women and men, solidarity, protection of the environment and promotion of the culture of peace, from a gender perspective.
- Poseer y comprender los conocimientos en el área de Ciencia y Tecnología de los Alimentos.
- Be familiar with discipline-specific terminology.
- Know the definition and classification of different food products according to national, European and international legal standards.
- Know the composition of the different food groups.
- Know the technological, nutritional and health properties of foodstuffs.
- Acquire capacity to assess the impact of the consumption of food on the health of the population.
- Know the general and specific parameters of quality for each food group.
- Adquirir capacidad de utilizar adecuadamente las fuentes de información y comunicación disponibles.

LEARNING OUTCOMES

- Familiarization with and correct use of the terminology of the subject.
- Capacity to compare composition and properties (nutritional, technological and beneficial) of the different food groups, using the food composition tables and databases.
- Nutritional evaluation of any food, based on its composition or general or nutritional labeling,



allowing integration within the food-health binomial.

- Knowledge of when, where and how to control food quality.
- Knowledge and capacity to use the basic and specialized literature sources, as well as some electronic sources addressing topics related to Bromatology.
- Capacity to adequately synthesize and organize information from different sources.
- Capacity to correctly express the knowledge gained and relate it to previously acquired data.
- Acquisition of a critical and creative approach (initiative and autonomy), combined with scientific rigor, to evaluate and resolve problems.
- Cooperation in the context of teamwork, for the exchanging of experiences.
- Capacity to apply / develop the acquired knowledge and skills with a personal perspective promoting the development of human rights.

DESCRIPTION OF CONTENTS

1. GENERAL

Subject 1.-Food Science. Concept .Academic guidelines

Subject 2.-Concept of food and nutrient. Nutrition value of foods. Food groups.

Subject 3.-Functional foods. Novel foods. Food complements.

Subject 4.- Books and food composition data bases

Subject 5.-Quality of foods.Criteria of quality.Alteration of foods

Subject 6.- Food information: food labeling

2. Animal foods

Subject 7- Meat and meats products. Classification. Composition and nutritional value. Characteristics of quality

Subject 8.- Fish, products of the fish and derivatives. Classification. Composition and nutritional value. Characteristics of quality

Subject 9.-Eggs and derivatives. Composition and nutritional value. Characteristics of quality

Subject 10.-Milk and dairy products. Classification. Composition and nutritional value. Characteristics of quality



3. Vegetal foods

Subject 11.-Fats of vegetal origin. Modified fats.Fat substitutes. Quality parameters

Subject 12.-Cereals and derivates.Classifications .Wheat and rice:structure and grain composition.Flour:composition. Bread. Bakery products.Composition and nutritional value. Breakfast cereals.Quality parameters

Subject 13.-Vegetables.Classification.Composition and nutritional value.Criteria of quality

Subject 14.-Tubercles. Composition and nutritional value

Subject 15.- Vegetables and derivates .Classification. Composition and nutritional value. Commercial presentations. Criteria of quality

Subject 16.-Fruits and derivates. Classification.Composition and nutritional value. Commercial presentations.Criteria of quality

4. Beverages

Subject 17.-Water.Potable water. Packaged drink waters. Parameters of quality

Subject 18.-Alcoholic beverages .Classification. Composition and nutritional value. Parameters of quality

Subject 19.-Non- Alcoholic beverages .Classification. Composition and nutritional. valueParameters of quality

5. Others

Subject 20.- Coffee, tea, cacao and derivates .Composition and nutritional value

Subject 21.- Natural sweeteners: Sugar and honey.Composition and nutritional value. Parameters of quality

Subject 22. Condiments and spices . Clasification and composition

6. Laboratory and informatic sessions

Five laboratory sessions(4h/sesión)

1.- Oils: Degree of acidity, peroxide index, UV absorption

2.-Fruit juices : vitamin C, density, Brix degree. Milk: Dry extract, ashes,humidity

3.-Vegetal caned foods: net and slipped weigth, pH, acidity, chlorides

4.- Coffee: cafein determination. Non-alcoholic beverages: Quinine determination

5.-Eggs:Traceability.Quality parameters. Cholesterol determination

Two informatic sessions (2x 2,5 h):

Foods comparisons: Composition and nutritional values. Uses of food composition base dates

Evaluation and food labeling

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	65,00	100
Laboratory practices	25,00	100
Seminars	5,00	100
Tutorials	4,00	100
Development of group work	25,00	0
Study and independent work	100,00	0
Preparation of evaluation activities	20,00	0
Preparation of practical classes and problem	12,50	0
TOTAL	256,50	

TEACHING METHODOLOGY

Theoretical classes: 65 hours / course. The classes are imparted with the support of technical audiovisual material. This material will be previously made available to the student through the virtual platform. At the end of each thematic block, the teacher will be able to use TIC tools to achieve the most relevant concepts.

Seminars: four coordinated seminars on topics provided by the teacher or proposed by the students. The seminars will be supervised through tutorships, arranged between the teacher and students. The seminars will be developed in writing and will be presented by the students. Following the verbal presentation, the rest of the students will have the opportunity to intervene, moderated by the teacher. A seminar did not coordinate the activities to bid for a tasca to the virtual classroom.

Practical classes (laboratory and software): 25 hours/course. Five practical laboratory classes with a duration of four hours, and two computer room sessions (5 hours). The teacher will previously distribute a booklet with the procedures, which will be available through the virtual platform.

The students will have to elaborate a memorandum, in the format that will facilitate him previously, of each of the practices of laboratory that it will include: objective, sample description, experimental data, calculation, interpretation of results and references used. They must elaborate and deliver the corresponding memorandum on having finished every practice

In the case of the two practical computer sessions, the students will carry out a work involving comparison of the composition and nutritional value of specifically foods, to be presented in writing. The memoranda are to be presented during the one week following conclusion of the practical classes.

Tutoring: Four tutorships are contemplated, each with a duration of one hour, per group of students. The students will establish the doubts on the subject, with short questions and/or previously supplied problems through the virtual platform.



During the classes, 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 coordinated seminars. This is intended to provide students with knowledge, skills and motivation to understand and address these SDGs

EVALUATION

1.- Theoretical and practice written exam: The exam material will include the subjects presented during the theoretical classes and laboratory and computer room sessions, involving open and short questions or alternative response questions (true-false), with due reasoning and short questions and the numerical solving of practical cases as well as online questionnaires.

Continuous evaluation will be carried out with various tests representing 70% of the final mark. It is required to obtain a minimum of 5 points out of 10 in the sum of all the tests carried out per semester. The mark of the test of the first semester only will be saved for the examination sessions of June and July.

2.-Seminars: The seminars coordinated (one each semester) will contribute 10% to the final grade, and the aspects relating to evaluation will be those agreed for coordinated seminars (to be made public through the virtual platform of the Center, Grau de Ciència i Tecnologia dels aliments). The student must write a report in relation to the seminary about food science matter. Evaluation will be made on the level of understanding of the contents and of the skills in his/her presentation and discussion. Not attending without justifiable cause coordinated seminars sessions, involve a zero mark corresponding to the seminar evaluation.

3.-Tutoring: Evaluation will be made of student attitude and reply to the questions presented in writing as homework in the virtual platform. Tutoring will contribute 10% to the final grade.

4.- Practical sessions: Evaluation will be made of the drafting of memoranda (this test will represent 10% of the final grade). Will be performed a written evaluation test of the practical classes as part of the continuous evaluation.

Students which did not pass the theoretical and practical examination, their marks from the practical session will be saved during the next two years. After this period, students must repeat again the practical session.

Participation in the tutorships, seminars and practical sessions is obligatory in order to pass the subject.

Call advanced exam: To request advancement of call for review of this subject, the students must have all the mandatory of the course carried out (seminars, tutorials and Practices).

Remember:



-Two seminars (one for each semester) are required to pass the matter.

Students who are repeating the subject, marks from the tutorials and seminars will be maintained. Marks corresponding to the lab report will be maintained for the following two years after their performing. After this period, lab sessions will have to be repeated.

-If the student pass tutories and seminars, but he/she do not perform the theoretical-practical proofs , the mark will be Non presented

-The subject will not be considered approved, although a mark of 5 is achieved by the sum of the grades for seminars, tutorials, theoretical-practical proofs, if marks do not met the minimum requirements described in the evaluation section.

REFERENCES

Basic

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CESNID (Centre d'Ensenyament Superior de Nutrició i Dietètica) Tablas de composición de alimentos. Ed. Universitat de Barcelona. Barcelona. España. 2002

SOUCI SW. FACHMAN W. KRAUT H. Food composition and nutrition tables.. La composition des aliments: tableaux des valeurs nutritives. 6th revised and completed edition by Heimo Scherz und Friedrich Senger. Stuttgart: Medpharm: Boca Ratón (etc.): CRC. 2000.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1.Contents

- The contents initially included in the teaching guide are maintained

2. Volume of work and temporary planning of teaching

- The teaching planning of the different activities in volume of work (ECTS), in days and hours, is maintained but the methodology of the activities changes with respect to the conventional teaching guide, due to the current situation that makes it necessary to adopt a hybrid teaching model.

3. Teaching methodology

-**Theoretical classes:** it will be carried out through synchronous sessions (synchronized videoconferences on the BBC, or other technology indicated by the Center) and face-to-face. The distribution of students will be done by groups, so that 50% will be in the Faculty classroom while the other 50% will go online, alternating their attendance by weeks. The class will always be held following the schedule (date and time) approved by the Center Board

-Seminars

The coordinated seminars will all be face-to-face according to the dates marked by the course calendar. The memory presentation, work diary and Power point presentation requirements are maintained.

- **Tutorials:** - They will be carried out face-to-face according to the dates set by the course calendar. The students have to upload to the virtual classroom of tutoring with proposed and evaluable activities, to be delivered through the "Task" option (setting the delivery time). Discussion and correction in classroom on the established schedule.

-**Practices:** Made already in the first semester

-Evaluation



A face-to-face evaluation of some of the theoretical-practical evaluation tests is foreseen with questions of the same type indicated in the teaching guide 2020-2021 of reasonable limited time (not exceeding 2h). If the sanitary conditions did not allow it, the evaluation would be transformed into an online model.

The proportion of the different evaluable activities is maintained on the final grade established in the 2020-2021 teaching guide, consisting of continuous evaluation with theoretical-practical tests (70%), coordinated seminars (10%), tutorials (10%) and memory -internship sheets (10%).

1.Contents

- The contents initially included in the teaching guide are maintained

2.-Volume of work and temporary planning of teaching

The teaching planning of the different activities in volume of work (ECTS), in days and hours, is maintained throughout the teaching period of the subject, incorporating a hybrid model, which will combine theoretical classes and no theoretical classes giving more weight to continuous evaluation.

All evaluable activities (theory classes, seminars, tutorials and practices) will be carried out respecting the workload of the teaching guide and the schedules established in the academic calendar.

3.-Teaching methodology

-Theoretical classes: upload to the Virtual Classroom of the materials for the theoretical classes (slides and complementary material) If necessary, online classes will be held through synchronous BBC videoconference.

-Seminars

Coordinated seminars: during the first semester they will be held online. The memory presentation, work diary and Power point presentation requirements are maintained. The exhibition and defense would be held in person if the health situation allows it, otherwise it will be online through BBC synchronous

Uncoordinated seminar: It will be held in a group and will be uploaded as a Task to the Virtual Classroom for evaluation. The time scheduled in the academic calendar for this will be done with online classes via synchronous BBC videoconference.

-Regulated tutorials: upload to the virtual classroom of tutoring with proposed and evaluable activities, to be delivered through the "Task" option (setting the delivery time), with resolution of doubts by the usual system of non-regulated tutorials, as well as by forum enabled in virtual classroom. Discussion and correction in classroom on the established schedule.

-Tutories not regulated: The virtual tutoring program is established (attention in 48 working hours maximum by email), as well as through the forum enabled in virtual classroom.

-Practices: 50% of the practices will be theoretical and the other 50% not theoretical. For no theoretical classes practices, one of the following methodologies will be used: synchronous BBC videoconferences, viewing of didactic videos and / or exercises proposed through the "Task" option of the Virtual Classroom.



4.-Evaluation

The proportion of the different evaluable activities is maintained on the final grade established in the 2021-2022 teaching guide, consisting of continuous evaluation with theoretical-practical tests (70%), coordinated seminars (10%), tutorials (10%) and memory -internship sheets (10%).

A face-to-face evaluation of some of the theoretical-practical evaluation tests is foreseen with questions of the same type indicated in the teaching guide 2021-2022 of reasonable limited time (not exceeding 2h). If the sanitary conditions did not allow it, the evaluation would be transformed into an online model.