UAB
Universitat Autònoma de Barcelona

Beverages and Foods of Plant Origin

Code: 103978
ECTS Credits: 6

2024/2025

Degree	Type	Year
2501925 Food Science and Technology	OT	4

Contact

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Teachers

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Teaching groups languages

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Prerequisites

The student should have done the courses *Mètodes de processament d'aliments I* and *II* of third year.

Objectives and Contextualisation

Begudes i aliments d'origen vegetal is the application of knowledges achieved mainly in *Mètodes de processament d'aliments I* and *II*.

It integrates and gives you knowledge about working of industries of beverages and foods of plant origin, from raw material receipt to final product storage.

Competences

- Analyse, summarise, resolve problems and make professional decisions.
- Apply the principles of processing techniques and evaluate their effects on the quality and safety of the product.
- Develop individual learning strategies and planning and organisation skills.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Search for, manage and interpret information from different sources.
- Show understanding of the mechanisms by which raw materials deteriorate and the reactions and changes that take place during storage and processing, and apply the methods for controlling this.

Learning Outcomes

1. Analyse, summarise, resolve problems and make professional decisions.
2. Apply the technological processes that are specific to milk and dairy products, meat and meat derivatives, fish products, egg products and vegetable products, and understand the modifications to the final product that these processes make.
3. Design complex processes in accordance with the established quality criteria.
4. Develop individual learning strategies and planning and organisation skills.
5. Foresee and solve problems that are specific to the food industries.
6. Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
7. Search for, manage and interpret information from different sources.
8. Select food conservation methods that slow down deterioration.
9. Select processes of conservation, transformation, transport and storage that are suited to foods of animal and plant origin.

Content

Theoretical classes

Lecture 1. Flours. Cereal grains: structure and composition. Milling. Flours: treatments and types.

Lecture 2. Baking. Bread and baking products. Formulation. Kneading. Proofing. Baking. Preservation.

Lecture 3. Other products derived from cereals. Biscuits. Pasta.

Lecture 4. Coffee. Green coffee. Roasting. Grinding. Decaffeination process. Instant coffee.

Lecture 5. Cocoa. Cocoa nibs. Cocoa powder and cocoa butter. Cocoa butter substitutes. Chocolate.

Lecture 6. Fruits and vegetables. Fresh produce: post-harvest treatments, refrigeration, controlled atmosphere, minimally processed products.

Lecture 7. Virgin olive oils. Description. Harvesting and transport to processing plant. Cleaning and washing. Milling. Beating. Centrifuging: two and three phases. Storage.

Lecture 8. Other oils and fats. Olive pomace oil. Oleaginous seed oils. Extraction: pressing and organic solvents. Vegetable fats: palm, palm kernel, coconut. Margarine. Transformations: interesterification, hydrogenation, fractionation.

Lecture 9. Refining. Chemical refining. Degumming. Neutralizing. Bleaching. Winterization. Deodorizing. Physical refining. Compound loss and formation.

Lecture 10. Fruit juices. Description. Citrus fruits (orange). Harvesting and pre-extraction processing. Extraction. Clarification. Manufacture of concentrated juice (vacuum thermoevaporation) and juice from concentrated juice (reconstitution). Apple. Peach. Pineapple. Grape.

Lecture 11. Bottled drinking waters and soft drinks. Description. Carbonated soft drinks. Ingredients and additives: water (pre-treatments and deaeration), compound syrup and CO2 (carbonatation). Bottling. Non-carbonated soft drinks.

Practical classes

A) VISITS TO FOOD INDUSTRIES

B) LABORATORY: Gelatinisation and microscopy and sensory identification of starches

C) TALKS:

- "Fibres and stabilising systems"
- "Snacks"
- "Candy"
- "Flavours"

D) FOOD MANUFACTURE IN PROCESSING PLANT:

- Bread
- Tiger nut milk

E) SEMINARS: exposition, discussion and evaluation of reports.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory	2	0.08	1, 2, 7, 4, 3, 5, 9, 8
Processing plant	4	0.16	1, 2, 7, 4, 3, 5, 9, 8
Seminars	4	0.16	1, 2, 7, 4, 3, 5, 9, 8
Talks	5	0.2	1, 2, 7, 4, 3, 5, 9, 8
Theoretical classes	29	1.16	2, 3, 5, 9, 8
Visits	9	0.36	1, 2, 3, 5, 9, 8
Type: Supervised			
Tutorials	2	0.08	
Type: Autonomous			
Self-learning brief exercises	2	0.08	1, 2, 4, 3, 5, 9
Study and bibliography search	61	2.44	2, 7, 4, 3, 5, 9, 8
Writing and exposition of a report	30	1.2	2, 7, 4, 3, 5, 9, 8

Methodology:

- Theoretical classes: the student will achieve the basic contents of the course; exercise resolution is included, and also the correction of three self-learning brief exercises which are previously and individually solved.
- Practical classes: they complete and reinforce knowledges achieved in theoretical classes.
  Visits (and talks) bring the student near to the professional sector, and thus allow him/her to know problems occurred in a food industry and tasks that he/she will do there in the future.
  Laboratory and processing plant activities allow the student to achieve skills and understand experimental concepts; the student will have guide notes containing aim, basis, methodology and results section.

Seminars (talks, reports): to complete and go in depth in theoretical contents, by analysing information, solving questions, and discussing and exchanging ideas and knowledges.

- Tutorials: to inform about content and working of the course; to clarify concepts and solve doubts; to evaluate the students.

Materials used in the course are in Moodle platform: legislation, presentations showed in theoretical classes, guide notes and other documents used in practical classes, multimedia, supplementary information, photos, grades.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam	35 % final grade	2	0.08	1, 2, 3, 6, 5, 9, 8
Report	17 % final grade	0	0	1, 2, 7, 4, 3, 5, 9, 8
Self-learning brief exercises	8 % final grade	0	0	1, 2, 7, 4, 3, 5, 9

The following will be evaluated:

- Attendance to theoretical classes: 10 %.
- Attendance to practical classes: 30 %.
- Report: 17 %. Students will write and present a report in groups.
- Self-learning brief exercises: 8 %. Students will solve individually three exercises, which will be corrected and discussed in the lecture room.
- Exam: 35 %. In the end of semester, the student will do, in writing, an exam (containing test and short questions).

The resit will consist of an exam on theoretical contents. To participate in it, the student must have obtained a minimum grade of 1.5 in the average of the course.

This course does not contemplate the single assessment option.

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Coffee and cocoa

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Fruits and vegetables, and fruit juices

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Oils and fats

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Waters and soft drinks (also see "Fruits and vegetables, and fruit juices")

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Other *impulse channel* products

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Software

No special software is required.

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	1	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	2	Catalan	second semester	morning-mixed
(TE) Theory	1	Catalan	second semester	afternoon