

Ous i Ovoproductes

Codi: 102646

Crèdits: 3

Titulació	Tipus	Curs	Semestre
2501925 Ciència i Tecnologia dels Aliments	OT	4	2
2502445 Veterinària	1.	5	0

Contact teacher

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Use of languages in the course

Teaching staff

Ana Cristina Barroeta Lajusticia

Eduard Grau Noguer

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Anna Zamora Viladomiu

Lengua vehicular majoritaria: **español**

Grupo íntegro en inglés: **No**

Grupo íntegro en Catalá: **No**

Grupo íntegro en español: **No**

Prerequisites

There are no prerequisites, but it is advisable for the student to refresh the knowledge acquired in previous courses:

- Microbiology and parasitology
- Food analysis and quality control
- Food microbiology
- Food products
- Food chemistry Processing Methods I and II

Objectives

The course "Eggs and egg products" is an optional course of the subject "Food Technology" that aims to give a global vision of the most important aspects in the production, conservation and transformation of eggs.

The main objectives are:

- To identify the composition, variability and the most important factors affecting the raw material.
 - To recognize technical problems of production or raw materials.
 - To identify the physical and biochemical processes that occur after laying and during storage, in order to maintain their quality.
 - Know the indicators of freshness and the most suitable means to maintain its quality.
 - Determine the preservation and transformation processes and the physicochemical, microbiological and sensory modifications that occur.
 - Establish the quality control applicable to the egg and egg products industry and establish the conditions of production, transformation, distribution and use.
 - Diversify products and know the integral use of all egg components.
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Competencies

Food Science and Technology

- Analyze, synthesize, solve problems and make decisions in the professional field. Apply the scientific method in problem solving.
- Apply knowledge of basic sciences in food science and technology. Apply the principles of processing techniques and evaluate their effects on product quality and safety.
- Seek, manage and interpret information from a variety of sources.
- Demonstrate an understanding of the mechanisms of deterioration of raw materials, the reactions and changes that take place during storage and processing and apply methods for their control.
- Develop autonomous learning and have organizational and planning skills.
- Identify pathogenic, spoilage and industrial microorganisms in food, as well as the favorable and unfavorable conditions for their growth in food and in industrial and biotechnological processes.
- Use computer resources for communication and information search in the field of study, data processing and calculation.

Veterinary

- Analyze, synthesize, solve problems and make decisions.
- Apply food technology for the elaboration of food for human consumption.
- Communicate information obtained during professional practice fluently, orally and in writing, with other colleagues, authorities and society in general.
- Demonstrate knowledge and understanding of the principles of food science and technology, quality control of processed foods and food safety.
- Demonstrate knowledge, understanding and differentiation of the main biological agents of veterinary interest.

Learning Outcomes

- Analyze the importance of microorganisms in the food environment and understand the biotic and abiotic factors that affect their development in these substrates.
- Analyze the importance of microorganisms in the food environment and understand the biotic and abiotic factors that affect their development on these substrates.
- Analyze, synthesize, solve problems and make decisions in the professional field.
- Analyze, synthesize, solve problems and make decisions.
- Apply the scientific method to problem solving.
- Apply the specific technological processes for the elaboration of milk and dairy products, meat and its derivatives, fishery products, egg products and vegetable products, and know the modifications derived from their application. processes in the finished product.

- Search, manage and interpret the information coming from different sources.
- Communicate the information obtained during the professional practice fluently, orally and in writing, with other colleagues, authorities and society in general.
- Describe the processes of alteration and deterioration of food.
- Develop autonomous learning and have organizational and planning skills.
- Identify the control parameters of the processes of deterioration and spoilage.

Contents

- Topic 1: Introduction. Production, uses and consumption.
- Topic 2: Structure and composition. Functional properties of the components.
- Topic 3: Physicochemical quality of the whole egg. Non-destructive methods. Microbiological quality.
- Topic 4: Egg production. Influence on quality. Modification of nutritional value: functional eggs.
- Topic 5: Whole eggs: Handling, packaging and preservation. Changes during conservation. Regulations.
- Topic 6: Egg products. Description.
- Topic 7: Liquid egg: Collection, transport to the plant and storage. Selection-ovoscopy. Cleaning/washing and disinfection. Breaking and separation of components. Filtration. Homogenization. Pasteurization. Packaging and/or post-treatment. Obtaining liquid egg product.
- Topic 8: Freezing.
- Topic 9: Concentration. Dehydration.
- Topic 10: Cooked eggs.

Methodology

The development of the course is based on the following face-to-face and non-face-to-face activities:

1. Theoretical classes: consisting of master classes with ICT support,
2. Practical classes: laboratory sessions in which students will work with techniques and procedures of analysis related to quality.
3. Visit to farm, packing and grading center.
4. Seminar for solving and presenting self-learning activities: 1 sessions (total 4h). During the seminars the students will have to present and discuss the most important aspects of the work done.
5. Tutorials: the student will have to attend at least two tutorials during the course in order to follow up the self-study work.
6. Autonomous work
7. Individual or group self-learning activities: the student will have to carry out a team activity, which will be proposed throughout the course coinciding with the different theoretical blocks. They are works, which involve the search for information by the student on one or more issues, and will have to be delivered in writing and presented to the rest of the students.

Note: 15 minutes of a class will be reserved, within the calendar established by the center /

degree, for the completion by the students of the evaluation surveys of the teacher's performance and evaluation of the subject / module.

Training activities

Title	Hour	ECTS	Learning outcomes
Type: Directed			
Laboratory training	4	0,16	6, 18
Seminars	4	0,16	4, 6, 8, 18, 20
Theory	15	0,6	1, 2, 6, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22
Visits	2	0,08	6, 18
Type: Supervised			
tutorials	2	0,08	6, 18
Type: Autonomous			
Study	33	1,32	6, 10, 18
Cases preparation	13	0,52	4, 5, 6, 7, 8, 10, 11, 14, 17, 18, 20

Evaluation

The competences of this course will be evaluated by means of:

1. control of Topics 1 to 10 and the activities related to individual self-learning and/or in the practices carried out in this period with a weight of 50% of the final grade.
2. Self-learning activities: both the written work and the presentation of the work will be evaluated and will have a weight of 30% of the final grade.
3. Attendance to the visit and presentation and evaluation of the questionnaire of the laboratory practice sessions: will be valued with 20% of the final grade.
4. A student will be considered not evaluable if he/she has participated in evaluation activities that represent $\leq 15\%$ of the final grade.

To pass the subject is requested:

- a) a minimum of 4 points (of 10) in the control; in case of not reaching this grade, it will be necessary to take the make-up exam.
- b) A minimum of 6 points (of 10) in the self-study activities.
- c) To have attended the practical sessions.

Evaluation activities

Títol	Pes	Hores	ECTS	Resultats d'aprenentatge
Continuing evaluation	30 %	0	0	3, 4, 5, 6, 7, 8, 10, 18, 20
Control	50 %	2	0,08	1, 2, 6, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22

Practical training and assistance to the visit	20 %	0	0	6, 9, 11, 14, 15, 17, 18, 19, 21, 22
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Bibliography

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Castelló Llobet, J. A. (2010) Producción de huevos Arenys de Mar, Real Escuela de

Avicultura. Mead G. C. (ed.) (2009) Análisis microbiológico de carne roja, aves y

huevos. Ed. Acribia Zaragoza. Mountney G.J. (1983) Poultry products technology. Ed.

Avi Pub. Co., Inc., Westport, USA.

Nau F. (2010) Science et technologie de l'oeuf. Tec & Doc / Lavoisier, París.

Olson V.M. i W.J. Stadelman (1988) Egg and poultry meat processing. Ed. Technisciences, París.

Parkhurst C.R. i G.J. Mountney (1988) Poultry meat and egg production. Ed. Van Nostrand Reinhold Co., New York.

Sauveur B. (1988) Reproduction des volailles et production d'oeufs. Ed. Institut National de la Recherche Agronomique, Paris.

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Int. Oxon. Solomon S.E. (1990) Egg and eggshell quality. Ed. Wolfe Pub. Ltd., Kent, UK.

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Yamamoto T. (1997) Hen eggs : their basic and applied science Boca Raton CRC.

BIBLIOGRAPHY (books on-line)

[Egg Innovations and Strategies for Improvements](#)

[Egg marketing: a guide for the production and sale of eggs](#)

[FAO 2003 Risk assessments of salmonella in eggs and broiler](#)

[chickens FAO 2002](#)

WEB

<http://www.aeb.org/>

<http://www.institutohuevo.co>

[m http://www.wpsa-aeca.es/](http://www.wpsa-aeca.es/)

<https://www.internationalegg.>

[com](#)

<http://www.sanovogroup.co>

[m/](#)

[http://www.fsis.usda.gov/regulations/Meat Poultry Egg Inspection Directory/index.as](http://www.fsis.usda.gov/regulations/Meat_Poultry_Egg_Inspection_Directory/index.as)

Software

No special is needed.