

**COURSE DATA****DATA SUBJECT****Code:** 36357**Name:** Animal Biology**Cycle:** Undergraduate Studies**ECTS Credits:** 6**Academic year:** 2026-27**STUDY (S)**

Degree	Center	Acad. year	Period
1212 - Degree in Gastronomic Sciences	Facultat de Farmàcia i Ciències de l'alimentació	1	First quarter

**SUBJECT-MATTER**

Degree	Subject-matter	Character
1212 - Degree in Gastronomic Sciences	Biology	BASIC

**COORDINATION**

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**SUMMARY**

"Animal Biology" is a compulsory subject of 6 ECTS taught in first year of the Degree in Gastronomic Sciences of the University of Valencia. This subject explains the levels of organization and production cycles of the main livestock and aquaculture species for human consumption. The different species and breeds used in animal production are shown. Cutting, conservation and culinary uses of the animal products are addressed. Firstly, meat production from the major livestock species is studied. Obtaining processes of meat are described as well as the pre- and post mortem events affecting meat quality. Then aquaculture production is discussed. Products from fisheries and aquaculture are shown and their quality is discussed. Finally the production of other foods of animal origin such as milk, eggs and honey are included.

**PREVIOUS KNOWLEDGE****RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**

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

**OTHER REQUIREMENTS**



## COMPETENCES / LEARNING OUTCOMES

### 1212 - Degree in Gastronomic Sciences

Adquirir la formación básica para formular hipótesis, recoger e interpretar la información para la resolución de problemas siguiendo el método científico y comprendiendo la importancia y las limitaciones del pensamiento científico.

Be able to distribute time appropriately for carrying out individual or group tasks.

Be able to engage in new fields of gastronomy in general through independent study.

Conocer el funcionamiento de aparatos y técnicas elementales relacionadas con la biología de las materias primas alimentarias.

Distinguir variedades, despiece, cortes, conservación y aplicaciones culinarias de alimentos animales.

Plan, order and channel activities in such a way that unforeseen events are avoided as much as possible, possible problems are foreseen and minimised, and solutions are anticipated.

Resolver tareas o realizar trabajos en el tiempo asignado para ello manteniendo la calidad del resultado.

Ser capaz de construir un texto escrito comprensible y organizado.

Ser capaz de realizar las aproximaciones requeridas con el objeto de reducir un problema hasta un nivel manejable.

Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.

Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.

Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.

Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.

## DESCRIPTION OF CONTENTS

1. Introduction to animal production
2. Levels of organization and livestock production cycles
  - 2.1. Ruminant production



## **1. MEAT**

1. Introduction to animal production
2. Levels of organization and livestock production cycles
- 2.2. Monogastric production
3. Carcass production
4. Carcass grading and cutting
5. Offal
6. Muscle structure and composition of the meat. Influence of production systems
7. The conversion of muscle to meat. Effect of temperature and stress. Conditioning
8. Storage, preservation, quality and culinary uses

## **2. FISH AND AQUACULTURE PRODUCTS**

1. Introduction to aquaculture production. Marine and freshwater aquaculture production systems
2. Products from fisheries and aquaculture characteristics
3. Quality traits in fish. Chemical composition and nutritional value
  - 3.1. Effect of diet on fish composition
  - 3.2. Post-mortem changes and during fish storage
  - 3.3. Evaluation of product quality. Estimation of fish freshness
4. Processes of transformation and fish conservation
5. Description of biotic and abiotic contaminants in fishery products and aquaculture

## **3. OTHER ANIMAL PRODUCTS (MILK, EGGS AND HONEY)**

1. Milk.
  - 1.1. Milk production systems
  - 1.2. Milk secretion and milking process
  - 1.3. Milk quality
  - 1.4. Factors affecting milk quality
  - 1.5. Traceability and milk quality control. Letter Q
2. Eggs. Production and factors influencing egg quality
3. Honey. Production and quality of honey

## **4. LABORATORY SESSIONS**

Laboratory sessions:

1. Meat: Physical and chemical traits of meat (3h)
2. Fish. Estimation of freshness rate in fish. Cutting fish (3h)
3. Other animal products: Quality control in primary production (1.5 h)

Milk: sampling, basic analysis, quality control

Eggs: Classification, estimation of egg freshness and egg quality

Computing lab practices:

1. Carcass production. Identification of retail cuts (3h)
  2. Estimation of growth and biometrics parameters (3h)
- Visit: Farms and aquaculture facilities of the UPV (1.5 h)



## WORKLOAD

### PRESENCIAL ACTIVITIES

Activity	Hours
Theory	45,00
Laboratory	15,00
<b>Total hours</b>	<b>60,00</b>

### NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	20,00
Preparation of lessons	15,00
Preparation for assessment activities	40,00
Resolution of case studies	5,00
<b>Total hours</b>	<b>90,00</b>

## TEACHING METHODOLOGY

**Lectures:** explanatory meetings of content. Classes are taught using audio-visual technical equipment.

**Laboratory lessons:** There will be 5 laboratory sessions in the UPV. A visit to farms and aquaculture facilities of the UPV is included.

## EVALUATION

The evaluation will be distributed as follows: Two written tests will be administered, corresponding to the first and second parts of the course content, respectively. Each test will include an open-ended written section and an objective section (multiple-choice). To pass each part of the course, students must score at least 5 out of 10 on each test. A final exam covering all course material will also be administered, consisting of an open-ended written section and a multiple-choice section. A minimum score of 5 out of 10 is required on the final exam in order to have the practical work grade counted. The final exam accounts for 80% of the final grade. Attendance at practical sessions is mandatory in order to pass the course. If a student has a justified reason for missing a practical session, it may be made up through an additional written assignment. Students must also complete a portfolio that compiles the activities carried out during the practical sessions. Attendance and the portfolio together make up 20% of the final grade.

## REFERENCES

Basic references:



Reference b1: Lawrie and D.A. Ledward. (2006). Lawrie's Meat Science. 7th Edition. Ed. Woodhead Publishing.

Reference b2: Warris, P.D. (2003). Ciencia de la carne. Ed. Acribia, Zaragoza.

Reference b3: Veisseyre, R. (1998). Lactología Técnica: Composición Recogida, Tratamiento y Transformación de la leche. Acribia, Zaragoza.

Reference b4: Sikorski, Z.E. (1994). Tecnología de los productos del mar: recursos, composición nutritiva y conservación. Ed. Acribia, S.A. Zaragoza.

Reference b5: Alasalvar, C. (2010) Handbook of seafood quality, safety, and health applications Ed. Ames, Iowa: Blackwell Pub., 2010

Reference b6: Ordoñez, J.A., Cambero, I., Fernández, L., García, M.L., de la Hoz, L., Selgas, M.D. (1998). Tecnología de los alimentos. Volumen II. Alimentos de origen animal. Ed. Síntesis S.A., Madrid.

Supplementary references:

Reference c1: Varnam, A.H., Sutherland, J.P. (1998). Carne y productos cárnicos. Ed. Acribia S.A., Zaragoza.

Reference c2: Park, Y. W., Haenlein, G. F. W. (2010). Manual de la leche de los mamíferos no bovinos. Ed. Acribia

Reference c3: Walstra, P., Geurts, T.J., Normen, A., Jellema, A., van Boekel, M.A.J.S. (2001). Ciencia de la leche y tecnología de los productos lácteos. Ed. Acribia S.A. Zaragoza.

Reference c4: Granata, L.; Flick, G. J.; Martin, Roy E. (2012). The seafood industry: species, products, processing and safety. Ed. Chichester : Wiley-Blackwell, 2012

Reference c5: Hall, George M. (2001). Tecnología del procesado del pescado. Ed. Acribia S.A. Zaragoza.

Reference c6: Londahl, G. (1984). El almacenamiento refrigerado en las pesquerías. Roma: FAO, 1984.

Reference c7: Merrifield, D. L.; Ringo, E. (2014) Aquaculture nutrition: gut health, probiotics and prebiotics. Ed Oxford : Wiley-Blackwell, cop. 2014 Referencia c8: Buxadé C. (1995). Avicultura clásica y complementaria. Mundi-Prensa, Madrid