# Products of Animal Origin

## Prof. Riccardo Negrini

***Text under revision. Not yet approved by academic staff.***

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The modern study of animal sciences, in addition to providing notions on how to maximise performance and therefore production, must also include information aimed at guaranteeing the integrity and healthiness of the foods we eat. This requires an in-depth study of topics relating to food safety, environmental impact, animal welfare and the effects of biotechnology on production chains. The course aims to provide students with a broad vision of the problems related to primary animal production through the notions of monogastric and ruminant anatomy and physiology, exploring in depth aspects of the food production chains and their qualitative evaluation.

Farming systems and related production techniques will be addressed in relation to the production guidelines for meat, milk and eggs, honey and aquaculture. Particular attention will also be paid to the environmental impact of production, the sustainability of livestock farming, and the welfare of farm animals. During the course, aspects of technological innovations, the impact of biotechnologies on the production chain, and issues related to the traceability and authentication of PDO and PGI products will be discussed.

Each topic will be treated by combining the theoretical/technical notions with practical and application examples.

Knowledge and application of knowledge

At the end of the course, students will have acquired:

- a wealth of theoretical and practical information on the main products of animal origin and their relative production models;

- knowledge of the current problems in the sector at national and European level;

- the ability to link different topics by fully exploiting the *know-how* acquired in their academic career.

Autonomous judging skills

The course aims to stimulate a critical and multidisciplinary approach in students and to encourage a problem-solving attitude through real case studies discussed collectively in class.

Communication skills

At the end of the course, students will be able to express themselves with an appropriate and specific technical-scientific lexicon relating to animal production, farming systems and the different types of products and supply chains.

Learning ability

Thanks to the knowledge acquired and the critical skills developed during the course, students will be able to deepen their knowledge independently by consulting texts, scientific articles and exploring resources on the web.

COURSE CONTENT

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|  | ECTS |
| Demography and distribution of domestic animals. The process of domestication and the evolutionary history of domestic animals. Rearing systems. | 0.5 |
| Milk production. Dairy species and breeds. Chemical and physical composition of milk and factors that influence its quality. | 1.5 |
| Meat production. Meat species and breeds. Rearing systems for meat production. Commercial quality.  | 1.5 |
| Egg production. Nutritional quality of eggs.  | 1.0 |
| The production of honey and the main bee products. | 0.5 |
| The environmental sustainability of production systems and the welfare of farmed animals. | 0.5 |
| Traceability and certification of products of animal origin. | 0.5 |

READING LIST

JR Campbell-M. Douglas Kenealy-KL Campbell: *Animal sciences. The biology, care and production of domestic animals.* 2010 4th edition, Waveland Press.

G. Bittante-I. Andrighetto-M. Ramanzin, *Fondamenti di Zootecnica,* Liviana Editrice, Padua, 1990.

P. Mc Donald-RA Edwards-JFD Greenhalg, *Nutrizione animale,* Longan, (Italian Edition), 1988.

R. Bortolami-Callegari-V. Beghelli, *Anatomia e fisiologia degli animali domestici,* Edagricole, Bologna, 1985.

R. Parigi-Bini, *Zootecnica speciale dei bovini,* Patron, Vol. 2, 1989.

I. Giavarini, *Tecnologie Avicole,* Edagricole, Bologna, 1985.

The PowerPoint slides projected during lectures will be made progressively available on the Blackboard platform, in conjunction with the discussion in class.

TEACHING METHOD

Frontal lectures aided by teaching materials in PowerPoint, during which the topics are dealt with in a logical and sequential fashion, framing them in a more general context of animal production before going into more detail on the commercial type being described.

Practical activities and educational visits supplement and provide more depth to specific aspects of the subject matter, providing basic notes on the physiology of domestic animals and information on some alternative types of production not addressed during lectures.

Seminars on specific topics held by industry experts complete the course teaching.

ASSESSMENT METHOD AND CRITERIA

The assessment is in the form of an oral interview which, through questions related to the topics covered, aims to assess the student's acquisition and understanding of the concepts taught, their breadth of reasoning, their command of a technical and scientific language, and their ability to draw links between the topics covered.

The oral interview generally consists of 3 open-ended questions on three different topics covered during the course. The completeness of each answer, based on the student's achievement of the course aims, and their reasoning and linking skills, is assessed out of 10 marks. The final summative result is calculated as the algebraic sum of the individual marks obtained.

NOTES AND PREREQUISITES

Notions of general chemistry, organic chemistry, and the physiology and anatomy of animals for zootechnical use will facilitate the understanding of some of the topics covered in the course.

Information on office hours available on the teacher's personal page at http://docenti.unicatt.it/.