**. - Products of Animal Origin**

## Prof. Aldo Prandini

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to provide students with a broad view of issues related to primary productions of animal origin, including the basic notions of anatomy and physiology of monogastric and ruminant animals, an investigation of the inherent aspects of food and their nutritional evaluation, and the principles of animal feeding and nutrition. Breeding techniques will also be dealt with in relation to production guidelines: meat, milk and eggs, aimed primarily at product quality, animal welfare and environmental impact.

At the end of the course the student will know the main techniques of animal breeding in livestock production. He will know the different foods, their composition and evaluation, as well as the feeding technologies that permit the production of animal products (meats, milk and eggs) of high quality and in accordance with the regulations governing the main Italian DOP products. The student will understand the main productive variables that permit the production of safe animal products using farming methods that respect animal welfare and have a low environmental impact.

***COURSE CONTENT***

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|  | ECTS |
| Principles of anatomy and physiology of monogastric and ruminant animals. Animal feed: fodder and concentrates; mechanical and chemical-physical feed treatments. Food evaluation: digestibility, gross energy, digestible, metabolisable, net. Protein evaluation: PER, BV, NPU, chemical score and essential aa index. Antinutritional factors. | 0.75 |
| The national and global production of cattle, sheep, goats, pigs, poultry and rabbits. Production and consumption of products of animal origin.  | 0.5 |
| Milk production: breeding and feeding techniques. Genetic and environmental factors that influence milk production and organoleptic, technological and nutritional quality.  | 1.0 |
| Meat production: breeding and feeding techniques for cattle, pigs and poultry. Genetic and environmental factors that influence meat production and organoleptic, technological and nutritional quality. | 2.25 |
| Egg production: breeding and feeding techniques for pullets and laying hens. Influence of genetic and environmental factors on the organoleptic, technological and nutritional characteristics of eggs for fresh consumption and for industry. | 0.5 |
| Tutorials.  | 1.0 |

***READING LIST***

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

P. McDonald-R.A. Edwards-J.F.D. 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,* Vol. II, Patron, 1989.

P. Monetti, *Appunti di Suinicoltura,* Cristiano Giraldi Editore, Bologna, 1997.

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

A. Sandrucci-E. Trevisi*, Produzioni Animali,* edises, 2022

Another reading list containing single subject works and updates will be indicated during the course.

***TEACHING METHOD***

Frontal lectures will take place with the teaching support of PowerPoint presentations and with videos taken from the Internet for a practical illustration of the topics covered in class.

Educational visits will also be made to companies in the animal products sector.

***ASSESSMENT METHOD AND CRITERIA***

 The exam will be in two parts: a written interim test and a final oral exam. The interim test, written in the middle of the course, is optional and will cover that part of the programme taught to date. Should a student pass the interim test, they will be exempted from covering the interim programme in the final oral exam; those students who fail, or don't take, the interim test, will have to cover the entire programme in the final oral exam.

***NOTES AND PREREQUISITES***

 Students must possess a basic knowledge of organic chemistry and biochemistry.

***OFFICE HOURS FOR STUDENTS***

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