# .- Animal Husbandry

# Animal Husbandry

## Prof. Andrea Minuti; Prof. Aldo Prandini

**Ruminants Module**

Prof. Andrea Minuti

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

The aim of the course is to teach students the main ruminant breeding techniques and the underlying physiological principles and mechanisms, in order to develop in students, the ability to use their knowledge in identifying and dealing with the various problems that arise in different types of livestock farms. A further aim is to incorporate this theoretical and practical knowledge within an economic context.

At the end of the course, students will know the productive systems adopted in the breeding of main livestock species, as well as the influences exerted by genetics, nutrition and breeding techniques on the qualitative and quantitative aspects of production, animal welfare and environmental impacts.

Students must also be able to collaborate in breeding matters with breeders and other professionals in order to:

* be able to detect and interpret the main zootechnical parameters;
* contribute to the correct technical-economic management;
* contribute to the prevention of problems that may occur.

***COURSE CONTENT***

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|  | ECTS |
| **Introduction** |  |
| General aspects related to animal production. Consistency of the Italian and world population of livestock species. Production and consumption of milk and meat products. | 0.25 |
| **Classification for cattle, sheep, goats and buffalo breeds** |  |
| Functional attitudes. Type for milk and type for meat in cattle.  Characteristics of the main autochthonous and foreign breeds. | 0.5 |
| **Milk production (cattle)** |  |
| The digestive physiology of ruminants.  Cattle breeding and feeding techniques in the various phases of the production cycle: calving, colostrum, suckling and weaning period, heifer, lactation.  Basics of physiology of the mammary gland.  Milking: milking routine, udder health. Manual, mechanical and automated milking. | 1.5 |
| **Reproduction techniques** |  |
| Elements of animal reproduction physiology: the oestrous cycle, follicular development, and hormonal regulation system. Heat detection with traditional and precision farming techniques. Natural and instrumental insemination. Oestrous synchronisation protocols, embryo transfer. Fertility indexes. | 0.5 |
| **Meat production (cattle)** |  |
| Breeding and feeding techniques for beef cows, veal and beef production. | 0.75 |
| **Minor livestock systems** |  |
| Breeding and feeding techniques for sheep, goats and buffalo. | 0.5 |

***READING LIST***

Technical articles in sector magazines.

Film clips available on the web.

Reference texts

A. Sandrucci & E. Trevisi. Produzioni Animali. Edises università. Napoli, 2022

C. MOLINARI, La bovina da latte. Gestione delle fasi di maggiore criticità nell'allevamento della lattifera, Edagricole, Bologna, 2006

G. SUCCI, Zootecnia Speciale, Città Studi, Milano, 1995.

***TEACHING METHOD***

The course includes classroom lectures where the key concepts of the course will be exposed. The lectures are supported by PowerPoint presentations, Video and discussion on case studies. All the material will be available on the Blackboard platform.

***ASSESSMENT METHOD AND CRITERIA***

The exam includes an oral exam comprise three questions on general topics, which then give rise to further specific questions. Students will have to demonstrate that they know the topics discussed during the lessons. To each question will be attributed a mark from 0 to 10, where 0 equates to a missing answer and 10 to an excellent answer. The final mark will compute as sum of the marks attributed to each question. The score is assigned based on the following criteria.

1. knowledge of the general concepts and command of the specific topics;
2. presentation accuracy, including use of the correct specific terminology;
3. ability to respond in an exhaustive manner to questions, and ability to link different topics.

A distinction is awarded to students who, in addition to possessing an excellent knowledge of the subject, demonstrate particular presentation and reasoning skills.

***NOTES AND PREREQUISITES***

Prerequisites

Students must possess a basic knowledge of organic chemistry, biochemistry, animal anatomy and physiology.

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