



# UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali		
ACADEMIC YEAR	2023/2024		
BACHELOR'S DEGREE (BSC)	AGRICULTURAL ENGINEERING		
SUBJECT	ANIMAL PRODUCTIONS		
TYPE OF EDUCATIONAL ACTIVITY	C		
AMBIT	10689-Attività formative affini o integrative		
CODE	12476		
SCIENTIFIC SECTOR(S)	AGR/19		
HEAD PROFESSOR(S)	ALABISO MARCO	Ricercatore	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	8		
INDIVIDUAL STUDY (Hrs)	132		
COURSE ACTIVITY (Hrs)	68		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	3		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<b>ALABISO MARCO</b> Tuesday 11:00 13:00 Dipartimento di Scienze Agrarie, Ambientali e Forestali SAAF, Università di Palermo, Viale delle Scienze, Edificio 4 - ingresso G, ufficio 4 G PT 71  Friday 09:00 11:00 Dipartimento di Scienze Agrarie, Ambientali e Forestali SAAF, Università di Palermo Viale delle Scienze, Edificio 4 - ingresso G, ufficio 4 G PT 71		

DOCENTE: Prof. MARCO ALABISO

<b>PREREQUISITES</b>	Knowledge of organic chemistry, biology and herbaceous crops are required
<b>LEARNING OUTCOMES</b>	1. Knowledge and understanding Acquisition of knowledge aimed at the technical and organizational management of livestock farms, and understanding the physiological processes on the basis of animal productions, and evaluating the products of animal origin through the examination of the main characteristics that contribute to define their quality. 2. Applying knowledge and understanding To have the ability to identify and modulate, in livestock farms, the technical and managerial elements that, while respecting animal welfare and environmental sustainability, could contribute to develop efficient production processes and obtain products of high quality standards by which to meet the needs of final consumers and the processing industry. 3. Making judgements to have the ability to assess the implications and the production results connected to technical and managerial interventions implemented in livestock farms. 4. Communications to have the ability to expose, either orally or through the writing of a paper, arguments focusing on techniques and management applicable in livestock productions systems, and to discuss, also with a non-expert audience, about the importance of the introductions of solutions and innovations with positive reflections on animal welfare, products quality and environment. 5. Lifelong learning skills To have with some autonomy the ability to use the specific Language of these topics, update the knowledge by examining the technical and scientific publications related to the livestock sector, and to be able to undertake further advanced studies.
<b>ASSESSMENT METHODS</b>	The evaluation with oral test (minimum grade is 18 and maximum is 30 cum laude), is stated using the following scheme: 1) Knowledge of the topics, capability to apply the learned knowledge, capability to analyze the studied problem, ability to present the topic is judged sufficient (18-21); 2) Knowledge of the topics, capability to apply the learned knowledge, capability to analyze the studied problem, ability to present the topic is judged fair (22-25); 3) Knowledge of the topics, capability to apply the learned knowledge, capability to analyze the studied problem, ability to present the topic is judged good-high (26-28); 4) Knowledge of the topics, capability to apply the learned knowledge, capability to analyze the studied problem, ability to present the topic is judged high advanced (29-30 cum laude).
<b>EDUCATIONAL OBJECTIVES</b>	Teaching is proposed to provide knowledge on management systems and farming techniques, traditional and innovative, the main ruminant species (cattle, sheep and goats), equine and asinine. It is explored the role that housing structures, systems and technical and organizational decisions have on the production efficiency of farms. They are also considered, even regarding the current regulations, the reflections of the types of management and housing on animal welfare and on the quality of the products.
<b>TEACHING METHODS</b>	Frontal lessons, classroom exercises corporate technical visits
<b>SUGGESTED BIBLIOGRAPHY</b>	A.Santucci, E.Trevisi, Produzioni Animali Edises Università (ISBN 978-88-362-0754; qualsiasi edizione). P.G. Monetti, Allevamento dei bovini e dei suini, GIRALDI Editore (ISBN: N.P.; qualsiasi edizione). G. Succi, Zootecnica speciale, Editrice CLESAV (ISBN: 8825171242 qualsiasi edizione). G. Succi, I. Hoffmann, La vacca da latte, Editrice CITTA' STUDI (ISBN: 8825100221 qualsiasi edizione). D. Balasini, Zootecnica Speciale. Principali razze di animali domestici e tecniche di allevamento per le diverse produzioni, EDAGRICOLE (ISBN: 8820623315 qualsiasi edizione). Thomas DGM, ANIMAL HUSBANDRY (third edition, 1983). Bailliere Tindall, London (ISBN: 0702009733). Foley, R. C., Bath, D. L., Dickinson, F. N., & Tucker, H. A.. Dairy cattle: principles, practices, problems, profits (ISBN:0812103092,9780812103090 qualsiasi edizione).

## SYLLABUS

Hrs	Frontal teaching
2	Introduction to the course. General description of dairy and meat sectors in Italy.
6	DAIRY CATTLE. Dairy farming systems. Dairy specialized breeds (Holstein Friesian, Brown, Pezzata Rossa Italiana) and activity of their breeders association with particular reference to genetic improvement programs. Sicilian autochthonous breeds: Modicana and Cinisara.
8	Milk: definition, synthesis and secretion mechanisms. The lactation curve. Factors affecting milk production. Manual and mechanical milking. Milk composition and variation factors. Quality milk traits milk (nutritional, organoleptic, chemical-physical, technological and healthy). Health standards for milk and structures for production, storage and processing according to current legislation.
2	Reproduction: puberty, time of fertilization, oestrus detection. Artificial insemination, oestrus synchronization, embryo transfer. Pregnancy diagnosis. Calving.

## SYLLABUS

Hrs	Frontal teaching
4	Calf rearing: care at birth, colostral phase, systems for milk feeding, milk replacers, housing and equipment, weaning. Veal calves. European regulations for calves protection. Heifer rearing: early first calving, feeding, housing.
10	Dairy cows: feeding in dry and milking phase, feeding management, unifeed, automatic feeding station; tie and loose housing and related milking systems. The cows welfare of the cows: regulation, structural requirements, evaluation of comfort.
8	BEEF CATTLE. Categories of beef cattle. Precocity of development in relation to genetic type. Main Italian (Piemontese, Marchigiana, Chianina, Romagnola, Maremmana and Podolica) and foreign breeds (Charolaise and Limousine). Cross-breeding. Transport and slaughter. Qualitative characteristics of the carcass and meat. Rearing of beef cows, light and heavy calves. Housing. Stressors and welfare assessment. Organic farming.
8	SHEEP and GOATS. Dairy and meat sectors. Farming systems. Grazing techniques. Main Italian breeds. Genetic improvement. Reproduction: seasonality, oestrus synchronization, artificial insemination. Suckling and weaning of lambs. Milk production. Mechanical milking. Feeding of dairy sheep and goats. Meat production. Carcass classification. Housing.
Hrs	Workshops
10	Laboratory activities concerning the following topics: preparation of zoecnic foods and animal products for analysis. Application of the forage and feed analysis methodologies for the evaluation of their nutritional value to be used in the constitution of food rations. Application of milk analysis methodologies and determination of lactodynamographic parameters to evaluate their quality and attitude to cheese making. Application of methods of chemical analysis of meat and determination of physical parameters color and cut resistance, through the use of the instrumentation supplied by the Department.
Hrs	Others
10	Corporate technical visits.