UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2023/2024		
BACHELOR'S DEGREE (BSC)	ANIMAL PHARMACEUTICALS AND NUTRACEUTICALS		
INTEGRATED COURSE	ANIMAL NUTRACEUTICS AND FOOD CHEMISTRY FOR ANIMALS - INTEGRATED COURSE		
CODE	22959		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	CHIM/08, CHIM/10		
HEAD PROFESSOR(S)	AVELLONE GIUSEPPE	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)	BARRAJA PAOLA AVELLONE GIUSEPPE	Professore Ordinario Professore Associato	Univ. di PALERMO Univ. di PALERMO
CREDITS	12		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	**AVELLONE GIUSEPPE** Tuesday 11:00 13:30 Studio del docente in via Archirafi n.32 scala A, primo piano, stanza 75SI CONSIGLIA LA PRENOTAZIONE TRAMITE MAIL:beppe.avellone@unipa.it **BARRAJA PAOLA** Wednesday 15:00 16:00		

DOCENTE: Prof. GIUSEPPE AVELLONE

PREREQUISITES	Basic knowledge of chemistry and physics
LEARNING OUTCOMES	Knowledge and understanding: knowledge needed to evaluate food and feed composition, nutritional value, chemical processes and transformation technologies involved in feed preparation and storage.
ASSESSMENT METHODS	The achievement of the objectives will be assessed through an oral examination at the end of theÂ aimed at assessing the degree of preparation achieved, language and expositive ability of the topics covered.Â The evaluation of the test is expressed as thirtieths as shown below:Â course (oral) 18-20/30.
TEACHING METHODS	Lectures with multimedia presentations

MODULE
ANIMAL FOOD CHEMISTRY

Prof. GIUSEPPE AVELLONE

SUGGESTED BIBLIOGRAPHY

Pulina G. 2005 - L'alimentazione della capra da latte. Ed.Avenue Media, Bologna. Pulina G. 2001.
L'alimentazione degli ovini da latte. Ed.Avenue Media, Bologna.
S. Aghina, C. Maletto 1979. Tecnica Mangimistica, CasaEditrice Esculapio
Dell'Orto V. e Savoini G. Alimentazione della bovina da latte.Edagricole
Materiale fornito dal docente

AMBIT	50151-Discipline Chimiche
INDIVIDUAL STUDY (Hrs)	98
COURSE ACTIVITY (Hrs)	52

EDUCATIONAL OBJECTIVES OF THE MODULE

Knowledge necessary to evaluate the composition of food and/or feed, their nutritional value, chemical processes and transformation technologies according to the different types of breeding and feeding techniques and nutritional management of animals in livestock production. The relative notions on nutrients useful for the formulation of diets suitable for the different physiological and productive stages of livestock; on technological innovations in the animal nutrition sector for production efficiency and animal welfare. The nutrition and health status of pets is essential both to prolong their life expectancy and to prevent the onset of diseases.

SYLLABUS

Hrs	Frontal teaching
2	Introduction. Articulation and purpose of the Course: from the chemical composition of foods intended for animal feed for production performance and animal welfare to the nutrition and health status of pets.
3	Drinking water and water intended for breeding: Water cycle, classification of natural waters, potability parameters; sampling, analysis; hardness, fixed residue, dissolved ions and gases, conductivity, BOD, COD; correction and purification.
3	Minerals: Macroelements and microelements essential in animal feed for production performance and for the nutrition and health of pets. Vitamins: Water-soluble and fat-soluble in animal feed for production performance and for the nutrition and health status of pets.
5	Lipids: classification, composition and formulations in animal feed and nutrition; related analyses.
5	Carbohydrates: classification, composition and formulations in animal feed and nutrition; related analyses
5	Proteins: classification, composition and formulations in animal feed and nutrition; related analyses
4	Technologies and industrial processes for conservation, processing and production of animal feed. Packaging and transport techniques.
5	Feeding and nutritional management of the dairy cow
5	Beef cattle feeding and meat quality management
2	Feeding of the different categories of pigs
2	Feeding of sheep and goats
2	Chicken feeding
5	Pet food and health status

MODULE
ANIMAL NUTRACEUTICS

Prof.ssa PAOLA BARRAJA

SUGGESTED BIBLIOGRAPHY

- Chimica dei Prodotti Naturali : Chimica, biosintesi e bioattività delle sostanze naturali
Autore: Paul M. Dewick Casa editrice: Piccin
https://www.piccin.it/it/chimica-farmaceutica/1880-chimica-biosintesi-e-bioattivita-delle-sostanze-naturali-9788829922345.html

Inoltre sarà cura del docente fornire materiale didattico ad integrazione ove necessario

AMBIT	50148-Discipline Chimiche
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48

EDUCATIONAL OBJECTIVES OF THE MODULE

The objectives of the course are to support the student with basic knowledge and principles in the use of nutraceutical in animal nutrition to prevent metabolic diseases and the relationships between animal nutrition and the impact with the enviroment

SYLLABUS

Hrs	Frontal teaching
8	Functional food. Nutraceuticals and natural supplements for animal use
8	Main foods with nutraceutical properties and their application in vetrinary
8	Food nutritional quality, Composition and roles of feedstuffs. Basic principles for animal nutrition.
8	Metbolism bioavailability of micronutrients and bioactive compounds
8	Undesirable substances in feedstuffs (heavy metals, dioxins, mycotoxins, peroxides) for animal nutrition
8	Cultivation in the framework of the Mediterranean system, for animal feed