

**ACADEMIC YEAR 2022/2023**

<b>General Information</b>	
Academic subject	<b>ANIMAL NUTRITION</b>
Moduli didattici integrati	<b>Animal Nutrition; Agronomy</b>
Degree Cours	Veterinary Medicine
Academic year	II
ECTS	9 (8 ECTS lectures; 1 laboratory and practical training)
language	Italian
Academic calendar	III and IV 7 weeks period
Attendance	Mandatory

<b>Professor/Lecturer</b>	<b>mail</b>	<b>phone</b>
Vito Laudadio	vito.laudadio@uniba.it	
Eugenio Cazzato	eugenio.cazzato@uniba.it	

Headquarter	Campus of Veterinary Medicine, S.P. 62 per Casamassima km 3, 70010 Valenzano
Virtual headquarter	Microsoft Teams
Tutoring (time and day)	Monday and Thursday 13.30-15.30. According to an appointment requested by email. Tutoring can be done using e-learning platforms.

<b>Syllabus</b>	
<b>Learning objectives</b>	<p>The course has the following specific training objectives:</p> <ul style="list-style-type: none"> <li>• provide knowledge relating to the evaluation and nutritional characteristics of feeds used in diets for animals as well as those relating to nutritional requirements;</li> <li>• provide the skills for the formulation of balanced diets for livestock and companion animals in the various physiological and production phases;</li> <li>• transfer the basic knowledge of the biology, phenology and physiology of the herbaceous species of agricultural interest most widespread in agro-zootechnical farms and of the agronomic management of Mediterranean pastures.</li> </ul> <p>The student will also have to demonstrate to be able to apply the knowledge acquired through the formulation of rations both for livestock in the different production phases, and for pets in the different physiological phases.</p>
<b>Course prerequisites</b>	Prerequisites: Physiology 2. The student must have acquired knowledge and skills relating to the anatomy, the biochemical and physiological mechanisms that regulate the functions of digestion, absorption and metabolic use of nutrients.



<p>Contents: <b>Animal Nutrition</b></p> <p>Teacher: <b>Vito LAUDADIO DE PALO</b></p> <p><b>Lectures</b> <b>ECTS: 6</b></p> <p><b>Hours: 60</b></p> <p><b>In field activities</b> <b>ECTS: 1</b></p> <p><b>Hours: 15</b></p>	<p>The module refers to the Basic Sciences</p> <p>Methods of sampling and analysis of animal feed.</p> <p>Systems of expression of the energy and protein value in the different species. Digestibility, nutritional value: Zootechnical foods: green and preserved fodder (hay, haylage, silage), cereals and their by-products, oilseeds and by-products. Residues from the food industry, mineral and vitamin supplements, additives. Nutritional evaluation of feed: voluntary consumption of feed, intake and bulk value. Requirements and rationing factors of animals in maintenance, gestation, growth, production of meat, milk, eggs, exercise.</p> <p>Rationing of livestock animals in production: cattle, sheep, goats, pigs, horses, rabbits and poultry.</p> <p>Rationing of the companion species.</p> <p>Feed technology: outline of legislation on feed preparation and innovative technological treatments of zootechnical feeds.</p> <p>Rationing of the main species of zootechnical interest: cattle, sheep, goats, pigs, horses, poultry and rabbits.</p> <p>Rationing in the companion species.</p> <p>Recognition and evaluation of food and feed for pets and livestock species. Evaluation of rations for species of zootechnical interest and for those relating to pets.</p> <p>Technical visits to livestock farms and feed mills.</p>
<p>Contents: <b>Agronomy</b></p> <p>Teacher: <b>Eugenio CAZZAIO</b> <b>Frontal teaching</b></p> <p><b>ECTS: 2</b></p> <p><b>Hours: 16</b></p>	<p>The module refers to the Basic Subjects</p> <p>Notes on: climate and agricultural plants, main physical, chemical and microbiological characteristics of the soil, the organic substance of the soil and organic fertilizers, mineral fertilization, crop rotation. Main aspects on cultivation techniques, use and quality of the products of the following classes of herbaceous crops: autumn-winter cereals (wheat, barley, oats, rye and triticale) and spring-summer (corn and sorghum), leguminous crops with a winter cycle (broad bean, pea, lupine, chickpea and lentil).</p> <p>General information on forage crops (definitions, criteria for use, classification, forage systems). Autumn-spring grasses of grasses and legumes. Spring-summer and summer grasses. Weed mixes. Meadows from monophytes and oligophytes. Main agronomic characteristics of the most important grass and legume grassland species. General aspects of permanent meadows, pastures and meadows-pastures. Mediterranean pastures: vegetation and flora, agronomic improvement and utilization.</p> <p>Preservation of forage (haymaking, dehydration, ensiling).</p>
<p><b>Biosecurity standards for the frequency of practical activities</b></p>	<p>Access to practical activities in the laboratories and stables is allowed only to students equipped with protective clothing (gowns and disposable latex gloves, safety boots), who have read the biosecurity manual.</p>

<b>Materiale per lo studio personale</b>	
<b>Books and bibliography</b>	<p><b>Animal Nutrition</b> Antongiovanni M. Buccioni A., Mele M. Nutrizione e alimentazione degli animali in produzione zootecnica, Bovini, Suini e polli, Edagricole. Ronchi B., Savoini G., Trabalza Marinucci M. Manuale di nutrizione dei ruminanti da latte. Edises Università. Martin-Rosset W. L'alimentazione dei cavalli, Edagricole. Biagi G., Chiofalo B., Cutrignelli M.I. De Angelei A., Fusi E., Meineri G., Prola L., Ricci R., Sandri M. Nutrizione e alimentazione del cane e del gatto. Edagricole.</p> <p><b>Agronomy</b> Bonciarelli F.- Fondamenti di Agronomia Generale. Bologna. Edagricole. Baldoni R., Giardini L. – Coltivazioni erbacee: Cereali e proteaginose. Bologna. Pàtron Editore. Baldoni R., Giardini L. – Coltivazioni erbacee: Foraggiere e tappeti erbosi. Bologna. Pàtron Editore.</p>
<b>Additional materials</b>	The books are recommended for further study and integration. Given the compulsory attendance, the lecture notes/minutes and the material provided by the lecturer during the course will be of fundamental importance.

<b>Work schedule</b>			
<b>Hours</b>			
Total	Frontal teaching	practice (laboratory, in field activities, other)	Individual study
<b>225</b>	<b>76</b>	<b>15</b>	<b>134</b>
<b>CFU/ETCS</b>			
<b>9</b>	<b>8</b>	<b>1</b>	<b>/</b>

<b>Teaching methods</b>	Frontal lectures with multimedia support. Practical activities in the classroom, laboratory and in field.

<b>Expected learning outcomes</b>	
<b>Knowledge and understanding</b>	At the end of the course the student will acquire knowledge and understanding of: <ul style="list-style-type: none"> <li>• recognize and evaluate the raw materials used for the diets of livestock and companion animals;</li> <li>• evaluate the nutritional characteristics and the quality of the techniques used in their preparation, of the diets administered to livestock and companion animals (DOC 1.35);</li> <li>• assess the body condition, well-being and nutritional status of the animals (DOC 1.20).</li> </ul>
<b>Applied knowledge and understanding</b>	At the end of the course, the student in addition to having acquired the knowledge of the teaching must be able to: <ul style="list-style-type: none"> <li>• evaluate the correctness of a diet administered to farm animals and pets, also in relation to the physiological state and health status;</li> <li>• apply the knowledge acquired through the formulation of rations both for farm animals in the various production phases, and for pets in the various physiological phases capable of enhancing the resistance of animals to disease and promoting their state of health and well-being ( DOC 2.9).</li> <li>• develop suitable solutions to satisfy metabolic demands with the available food resources in order to provide the animal with a ration capable of ensuring the</li> </ul>

	satisfaction of nutritional needs and the quality of derived products (DOC 1.18).
<b>Soft skills</b>	<p>Autonomy of judgment</p> <ul style="list-style-type: none"> <li>• Be able to review and critically evaluate the literature (DOC 1.8).</li> <li>• Ability to autonomously judge data relating to zootechnical contexts and to solve complex problems inherent to the zootechnical context</li> <li>• Ability to propose solutions in problematic situations</li> <li>• Ability to carry out a critical analysis of the effects of the agronomic management of the company with the quantitative and qualitative response of the main cereal, forage and pasture crops.</li> </ul> <p>Communication skills</p> <ul style="list-style-type: none"> <li>• Ability to adopt different linguistic registers, including the technical-scientific one to adequately communicate experimental results (DOC 1.4)</li> <li>• Ability to work in a team, adopting adequate communication and interaction strategies (DOC 1.6.)</li> <li>• Ability to describe the effects of cultivation techniques on the quantitative-qualitative response of the main cereal, forage and pasture crops.</li> </ul> <p>Ability to learn independently</p> <ul style="list-style-type: none"> <li>• Ability to independently learn and deepen topics of professional interest (DOC 1.13)</li> </ul>
<b>Summary of the knowledge and skills that the integrated course helps students acquire (Day One Competence) provided by the EAEVE</b>	<p><b>Knowledge:</b></p> <p>1.18 1.20 1.35 2.9</p> <p><b>Skills:</b></p> <p>1.4 1.6 1.8 1.13</p>

<b>Assessment</b>	
Methods of assessment	The examination of the integrated course of "Animal Nutrition and Agronomy" allows the acquisition of 9 ETCS required by the study plan. The exam includes a partial test of the animal nutrition and agronomy modules. The ETCS are considered acquired only after the two parts have been passed and the minutes have been registered on the Esse3 web portal.
Evaluation criteria	<p>Knowledge and understanding: Verification of the results achieved will be conducted:</p> <ul style="list-style-type: none"> <li>• during the course: <i>in itinere</i> written tests consisting of the verification and possible correction of rations for familiar animals (3rd two-month period) and rations for livestock production animals (4th two-month period).</li> <li>• at the end of the course, through the oral final exam which will verify the acquisition of the required knowledge as detailed in the course objectives.</li> </ul> <p>Applied knowledge and understanding:</p> <ul style="list-style-type: none"> <li>• Ability to critically assess the quality of raw materials and feed for livestock and companion animals;</li> <li>• evaluate the correctness of a diet administered to farm animals and pets, also in relation to the physiological state and state of health;</li> </ul>



	<ul style="list-style-type: none"> <li>• formulate suitable food plans for pets in different physiological conditions and for livestock in different production situations.</li> </ul> <p>Autonomy of judgment:</p> <ul style="list-style-type: none"> <li>• ability to analyse and be critical of the topics studied</li> <li>• global and unitary assessment ability of the most common situations of food management of livestock and pets</li> </ul> <p>Communication skills:</p> <ul style="list-style-type: none"> <li>• ability and clarity of presentation</li> <li>• expressive appropriateness, with particular reference to specialist terminology</li> </ul> <p>Ability to learn:</p> <ul style="list-style-type: none"> <li>• Ability to rework knowledge and transfer it into new and different situations</li> </ul>
Criteria for assessment and attribution of the final mark	<p>The results of the Animal Nutrition and Agronomy tests will contribute to the definition of the final evaluation of the Animal Nutrition exam.</p> <p>The final grade is the result of the collegial judgment relating to the two partial tests in which the student must demonstrate that he has acquired a critical sense of the topics studied. The final evaluation, expressed out of thirty, will be considered passed with a grade equal to or greater than 18 and will take into consideration not only the accuracy of the answer, but also the communication skills, clarity of presentation, disciplinary competence and the level of detail.</p>
<b>Other</b>	--
	--