Curricular Unit Form

POLITÉCNICO DE PORTALEGRE

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Escola Superior Agrária de Elvas

Updated On	2023/03/28
Curricular Year / Period	2022/23 / S1
Course	CTeSP - Agricultural Production
Curricular Unit	Nutrition and feeding of livestock species
Language(s) of Instruction	Português

ECTS/tempo de trabalho (horas)

ECTS	Total	Horas de contacto semestral								
		T	TP	PL	S	TC	E	O	OT	EC
6	160	32		32						

T - Theoretical; TP - Theoretical and practical; LP - Laboratory Practice; S - Seminar; TG - Tutorial guidance; FW - Fieldwork; T - Training; ; EC - Clinical teaching; O* - Other hours typified as Clinical Training under the Directive 77/453/EEC of June 27, adapted by Directive 2005/36/EC.

Teacher in charge (GDPR consent)

[complete name, email]

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Prerequisites

[Curricular Units that must precede and specific entry competences]

No

Learning outcomes

[Description of the overall and specific objectives] [Knowledge, skills and competences to be developed by students]

To know the digestive peculiarities of the different livestock species. To know the different groups of nutrients and their functions in animal physiology. Identify and know how to distinguish different types of feed. Know the processes of food analysis. Understand the environmental impacts of livestock production and know the main strategies for their reduction. To know the main pathological processes of metabolic or alimentary origin in the animal species, as well as the strategies to prevent its appearance. Know how to score the body condition of the different livestock species Know how to plan the production and purchase of food according to the needs of livestock, and seeking to minimize production costs. Know how to consult and use tables of needs and composition of food in the elaboration of food for livestock species. Know how to solve, manually or using computer tools, simple breeding problems of livestock species.

Syllabus

MODULE I - INTRODUCTION TO ANIMAL NUTRITION AND FEEDING:
Importance of nutrition and feeding in the field of animal production (livestock species) and the maintenance of livestock species (health, well-being and quality of life). Brief description of the industrial feed production sector (in Portugal and worldwide). Nutrient concept; nutrient groups and their main properties; Types of food; coarse foods (roughage), energy and protein concentrates; Main differences from the digestive point of view between monogastric and ruminants. Digestibility and control of ingestion. Nutritional needs according to species, physiological status and levels of production. Food analysis: centesimal analysis (Weende method) and fiber quality analysis (Van Soest method); other analytical methods. Consultation of food composition tables and nutritional needs. Visit to a compound feed factory.
MODULE II - NUTRITION AND FEEDING OF LIVESTOCK SPECIES:
Principles of feeding; articulation of animal needs, composition of food and costs. Body condition assessment in cattle, small ruminants, horses and pigs. Feeding of dairy and meat ruminants. Food handling of monogastric animals (horses, pigs, rabbits and birds). Practical exercises on feeding in various livestock species. Food planning of livestock (practical cases). Food strategies to reduce the environmental impact of livestock. Visit to an effective bovine meat and an effective dairy sheep.
MODULE III - PATHOLOGIES OF METABOLIC AND FOOD ORIGIN IN FEEDING SPECIES
Nutritional deficiencies. Food diseases in cattle and small ruminants. Dietary pathologies in equine and swine herds. Eating disorders in rabbits and fowl.

Teaching methodologies (including assessment)

[Specify the types of assessment and the weights and evaluation criteria]

1 - Teaching methodologies

Sessions of theoretical framework and debate. Presentation of demonstrative examples and their criticism; discussion of practical cases presented by the teachers and the students, presupposing the active participation of the students in the classes. Problem solving, in classroom, on Nutrition and Feeding matters with greater impact on the professional life of future graduates. The in-room sessions will be complemented by a visit to a compound feed factory and a beef livestock farm and a dairy livestock farm.

	2 - Period assessment Two written tests during the semester. Test 1, concerning Module I, weighs 40% on final grade, and test 2, concerning Modules II and III, weighs 60% of final grade. Minimum grade in each test: 10 out of 20 marks. **3 - Examination assessement** Written test, correspondingo to the full contents, or only to the modules where the student has failed. Minimum grade: 10 out of 20 marks.
Bibliography	**1 - Main Bibliography** Carbó, Carlos Buxadé (coordenador), 1995. Zootecnia. Bases de Producción Animal. Tomos I e II. Ediciones Mundi-Prensa. Madrid. Fuller, M.F. (Ed.) (2004). The Encyclopedia of Farm Animal Nutrition, CABI Publishing, 606 pp. Garnsworthy, P.C.; Wiseman, J. (2009). Recent Advances in Animal Nutrition, Nottingham University Press, 333 pp. McDonald, P.; Edwards, R.A.; Greenhalgh, J.F.D.; Morgan, C.A.; Sinclair, L.A.; Wilkinson, R.G. 2011. Animal Nutrition. Prentice Hall- Pearson, 692pp. INRA, 1985. Alimentación de los animales monogastricos - cerdo, conejo, aves. Ediciones Mundi-Prensa. Madrid. Jarrige, R. 1988. Alimentação dos bovinos, ovinos e caprinos. Colecção Euroagro - Publicações Europa-América, Mem-Martins. Nutritional needs and feed composition tables National Research Council. Body condition scoring charts for different species (several authors). **2 - Complementary Bibliography**
Special Situations [Students with special status]	**1 - Period assessment - Students with special status** Two written tests during the semester. Test 1, concerning Module I, weighs 40% on final grade, and test 2, concerning Modules II and III, weighs 60% of final grade. Minimum grade in each test: 10 out of 20 marks. **2 - Examination assessement - Students with special status** Written test, correspondingo to the full contents, or only to the modules where the student has failed. Minimum grade: 10 out of 20 marks.