FEED SCIENCE AND ANIMAL NUTRITION

1	Course Title:	FEED SCIENCE AND ANIMAL NUTRITION
2	Course Code:	VET2020
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	4.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	VET2020 Feed Science and Animal Nutrition
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. HAKAN BİRİCİK
15	Course Lecturers:	Prof.Dr.İ.İ TÜRKMEN, Prof.Dr.H.BİRİCİK, Doç.Dr. G.DENİZ, Doç.Dr. Ş.Ş. CENGİZ, Doç.Dr. H. GENÇOĞLU, Doç.Dr. Derya YEŞİLBAĞ, Yard.Doç.Dr. Çağdaş KARA
16	Contact information of the Course Coordinator:	meren@uludag.edu.tr , +902242941362, Uludağ Üniversitesi Veteriner Fakültesi Hayvan Besleme ve Beslenme Hastalıkları Anabilim Dalı, Görükle Kampüsü, Nilüfer-Bursa/Türkiye
17	Website:	http://veteriner.uludag.edu.tr/bolumler/ZooHayBes/haybes.html
18	Objective of the Course:	To teach; techniques of processing, preparation and using of forage and concentrate feed, basic principles of animal nutrition according to animal species and physiological periods. Give basic knowledges about common nutritional animal diseases.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Feedstuffs and feed evaluation systems, and importance in animal nutrition
	2	Basic principles and importance of cattle nutrition
	3	Basic principles and importance of sheep and goat nutrition
	4	Basic principles and importance of poultry nutrition
	5	Basic principles and importance of horse nutrition
	6	Basic principles and importance of cat and dog nutrition
	7	Basic principles and importance of pig nutrition
	8	Basic principles and importance of nutrition in rodents and some exotic species
	9	
	10	

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Introduction to feed science, general information on nutrient components of feedstuffs, defining and classification of nutrients, digestibility according to species	Introduction to feedstuffs, forage, grass and concentrate feed

2	Feed evaluating systems, factors affecting digestibility, nutrient value of feeds, to energy calculation, evaluation of proteins	Evaluation of physical and chemical properties of feeds in laboratory
3	General properties of forages, wet forages (green grass, silage and pasture), dry forages (hay, straw), factors affecting pasture quality and management of pasture	Evaluation of physical and chemical properties of feeds in laboratory (cont.)
4	Concentrate feeds, energy feeds and general properties, grains, fats, protein feeds derived from vegetables and animals, general properties of protein feeds	Demonstration of techniques for feed digestibility systems
5	Basic information on calf and heifer nutrition and their nutrient requirements, calf nutrition (0 to 5 months age), heifer nutrition (6-12 months and from 12 months until giving birth)	Demonstration of techniques for feed digestibility systems (cont.)
6	Basic nutritional information on dry and lactation cows, their nutrient requirements, dry and lactation cow nutrition according to periods	Calf and heifer nutrition and feeding practice
7	Basic nutritional information in beef cattle, sheep and goat, their nutrient requirements, nutrition of lambs (breeding and fattening), sheep, goat and kids	Dry and lactating cow nutrition and feeding practice
8	Definition of feeds used in broilers, turkey and quail rations, the energy and nutrient requirements of broilers according to their physiological periods	Beef cattle nutrition and feeding practice
9	Nutrient requirement of laying hens, basic	Sheep and goat nutrition and feeding practice
	and quail, turkey and quail nutrition according to physiological periods	
	nutrient requirements of horses, horse	
	nutrition according to physiological periods	
	nutrient requirements, commercial feeds for	
13	Basic nutritional information in pig, nutrient	Dog and cat nutrition and feeding practice
	to physiologic periods	
14	Rodent and exotic animal nutrition and basic	Pig nutrition and feeding practice
	(hamster, mouse, rabbit etc), feeds used in pig rations	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	4.00	56.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	28.00	28.00
Others	0	0.00	0.00
Final Exams	1	40.00	40.00
Total Work Load			208.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other Materials:	1. Yem Değerlendirme ve Analiz Yöntemleri (Feed Evaluation and Analysis Methods), Karabulut, A.; Canbolat, Ö. Uludağ Üni. Basımevi müdürlüğü, Bursa, 2005. 2. Yemler Yem Hijyeni ve Teknolojisi (Feed and Feed Hygiene and Technology). Ergun et. al. Pozitif Matbaacılık.Ankara, 2004. 3. Çiftlik Hayvanlarının Beslenmesinde Temel Prensipler (Basic Principles in Farm Animal Nutrition). Ed. Yavuz H.M., Hilal Yayınevi, İstanbul, 2001. 4. Hayvan Besleme ve Beslenme Hastalıkları(Animal Nutrition and Nutritional Disesase). Ed. Ergun, A., and Tuncer, Ş.T. Pozitif Matbaacılık, Ankara, 2004. 5. Tables of Composition and Nutritional Value of Feed Materials. Ed. Sauvant, D., Perez, J.M., Tran, G. INRA Editions, Wageningen Academic Publishers, 2004. 6. Forage Evaluation in Ruminant Nutrition. Ed. Givens, D.I., Ovens, E., Axford, R.F.E., Omed, H.M. CABI Publishing, Wallingford, UK, 2002. 7. Animal Nutrition (Sixth Edition). McDonald, P., Edwards, R.A., Greenhalgh, J.F.D., Morgan, CA. Pearson Education ltd., Edinburgh, 2002. 8. Livestock Feeds and Feeding (Fifth Edition). Kellerns, R.O., Church, D.C. Prentice Hall, New Jersey, 2002. 9. Amino Acids in Animal Nutrition (Second Edition). D'Mello, J.P. Felix (Editor), CABI Publishing, 2003. 10. Mineral Tolerance of Animals. Second rev. ed. National Academy Press, Washington, DC, 2005 11. National Research Council. Nutrients Requirements of Horses. 6th rev. ed. National Academy Press, Washington, DC, 2007
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	1	10.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK2	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK3	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK4	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0

ÖK5	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK6	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK7	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0
ÖK8	5	4	3	2	2	5	1	1	2	1	2	2	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**