AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Energy Evaluating Systems of Feeds						
Course Code	VHB652		Couse Level	Third Cycle (Doctorate Degree)			
ECTS Credit	10	Workload	254 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	Educate to masters who have sufficient knowledge about the energy utilisation systems in ruminant and mono gastric animals						
Course Content	Energy utilisation systems for mono gastric animals. Energy utilisation systems for ruminant. Energy utilisation systems for determination of energy level of feeds for ruminant and poultry. Scientific and technologic improvements related with veterinary science.						
Work Placement	N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Discussion, Individual Study				
Name of Lecturer(s)							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	60
Assignment	4	10

Recommended or Required Reading

1	Givens, D.I., De Boever, J.L. and Deaville, E.R. (1997). The principles, practices and some future applications of near infrared spectroscopy for predicting the nutritive value of foods for animals and humans. Nutr. Res. Rev., 10: 83-114.
2	Kellerns, R.O., Church, D.C. (2002) Livestock Feeds and Feeding, Prentice Hall, New Jersey.
3	McDonald, P., Edwards, R.A., Greenhalgh, J.F.D., Morgan, C.A. (2002) Animal Nutrition, Longman Scientific & Tecnical, England.
4	Pond, W.G., Church, D.C., Pond, K.R., Schoknecht, P.A. (2004) Basic Animal Nutrition and Feeding, John Wiley & Sons, New York.
5	Ensminger, M.E., Oldfield, J.E., Heinemann, W.W. (1990). Feeds and Nutrition, Second Edition, The Ensminger Publishing Company, California, USA.

Week	Weekly Detailed Course Contents	
1	Theoretical	Determination of energy and energy utilisation systems
2	Theoretical	Steps of energy: Crude energy (CE), digestible energy (DE), metabolically energy (ME), net energy (NE)
3	Theoretical	Factors which can affecting utilisation of feed energy levels: Animal species
4	Theoretical	Factors which can affecting utilisation of feed energy levels: degree of digestibility of feed
5	Theoretical	Factors which can affecting utilisation of feed energy levels: quality of protein
6	Theoretical	Factors which can affecting utilisation of feed energy levels: feed additives which decrease of metan production
7	Intermediate Exam	Midterm exam
8	Theoretical	Factors which can affecting utilisation of feed energy levels: feed intake
9	Theoretical	Methods of energy utilisation systems for poultry-chemical methods
10	Theoretical	Methods of energy utilisation systems for poultry-biologic methods
11	Theoretical	Methods of energy utilisation systems for poultry-chemical methods
12	Theoretical	Methods of energy utilisation systems for poultry-chemical methods
13	Theoretical	Factors which affecting of heat: Quality of feed, balance of ration, some minerals (etc., Mg and P), frequency of feeding
14	Theoretical	Methods for energy determination of feeds
15	Theoretical	Other methods for determination of feed quality
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	15	0	2	30
Assignment	10	0	8	80
Reading	14	0	6	84
Midterm Examination	1	12	2	14
Final Examination	1	16	2	18
			Total Workload (Hours)	254
		[Total Workload (Hours) / 25*] = **ECTS**		10

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To have sufficient knowledge about the energy utilisation systems for poultry.
2	To have sufficient knowledge about the energy utilisation systems for ruminant.
3	To have sufficient knowledge about the determination of energy level with protein utilisation systems for ruminant and poultry.
4	Students will more easily adapted to new scientific and technologic improvements with a help of correct and recent knowledge education. They have ability to present correct solutions for problems.
5	Methods for energy determination of feeds

Programme Outcomes *(Animal Nutrition and Nutritional Diseases (Veterinary Medicine) Doctorate)*

1	Knows information about importance of forage and concentrates in basic animal nutrition for protecting animal health in scientific and technological animal production.
2	Have ability to formulate economical and full-satisfactory rations with considering product quality and health. May inform animal producers about practical/appropriate feeding methods.
3	Can adapt to recent scientific and technological developments in animal nutrition easier and produce proper strategies against to problems on this field.
4	Knows the properties of feeds used in proper and economical rations formulated due to needs of animal species.
5	Can give information to animal producers about properties of common feedstuffs used in Turkey
6	Knows organoleptic, physical diagnostic and chemical analysis methods used in determining feed quality.
7	Have information about processing and the effects of processing on animal yield.
8	Can identify the term "feed hygiene" and have information about the usage availability of contaminated feedstuffs.
9	Can apply the informations related to feed additives in a proper way.
10	Understands the results and factors decreasing production.
11	Knows the nutrition related diseases and their solution recommendations which may be applied in feeding or formulating feeds for preventing nutiritonal diseases.
12	Knows about the availability level of feedstuffs after consumed and can perform digestibility trials.
13	Knows the definition of stress, stress sources and effects on health and production level of animals.
14	Have sufficient information on classification, activation and fermentation of rumen microorganisms plus carbohydrate, lipid and protein digestibility.
15	Knows the factors effecting feed intake and negative factors in feedstuffs and preventation of them.
16	Comments on feeding behaviours and related yield parameters.
17	Have information on basic terms related to feed legislation, feeds used in animal nutrition and their legal regulations.
18	Have information about biotechnological research conducted on feeds and animal nutrition.
19	Knows the effects of nutrition on food quality, fertility, immunity and parasite enfestations.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3
P12	5	5	5