



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Enviromental Stresses in Animal Nutrition							
Course Code		VHB625		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	6	Workload	150 ( <i>Hours</i> )	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		Raising experts knowing alleviation methods of negative effects of common stress factors faced in animal production. Raising veterinarians has ability of informing producers about negative effects of stress factors on animal health and production.							
Course Content		Determination of negative effects of environmental stress and its identification.Stress mechanism. Evaluation of stress factors in poultry and ruminant production. Considerations must be taken to protect health and performance status of stressed animals. Effects of feed additives in stressed animals.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70
Assignment	5	11

### Recommended or Required Reading

1	Mutaf, S., Sönmez, R. (1984). Hayvan Barınaklarında İklimsel Çevre ve Denetimi, Ofset Basımevi, İzmir
2	Erganiş, O. (2002). Kanatlılarda Sıcak Stresine Karşı Önlemler, Kanatlı AR-GE Yayınları 6, Sakarya.
3	NRC (1981). Effect of Enviroment on Nutrient Requerments of Domestic Animals, Ntional Acedemic Pres, Oklahama.
4	Daghir, NJ. (1995). Poultry Production in Hot Climates, CAB International, Cambridge.

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition of stress and its negative effects on animal health.
2	Theoretical	Determination of stress sources. And explaining its mechanism related to physiological and metabolic processes
3	Theoretical	Classification of environmental stress factors.
4	Theoretical	Effects of stress raised from housing conditions and its effects on animal health and performance.
5	Theoretical	Negative effects of high stocking density and improper bedding or waterer systems used in poultry production systems.
6	Theoretical	Effects of stress raised from improper housing systems and its effects on health and productive performance of ruminants.
7	Theoretical	Evaluation of stress factors in closed ruminant housing systems having improper design or low air quality (Midterm exam)
8	Theoretical	General repetition and giving home assignment
9	Theoretical	Negative effects of heat stress in poultry production. Considerations involving management and feeding issues to prevent it.
10	Theoretical	Performance decrease in ruminants under heat stress. Precautions and practical solutions for the field.
11	Theoretical	Stressor effects of seasonal change in grazing ruminant.
12	Theoretical	Stressors affecting animal health and performance related with feeds (excess amounts of feeds given, deficient processing of feeds, antinutritional factors) in ruminants.
13	Theoretical	Feed additives may be supplemented under possible stress effects. Investigating reflections of feed additives on health and performance status of stressed animals.
14	Theoretical	Presentation of home assignment and talks on deficiencies of it
15	Final Exam	Final exam



**Workload Calculation**

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	5	4	1	25
Reading	14	0	5	70
Midterm Examination	1	8	2	10
Final Examination	1	15	2	17
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

**Learning Outcomes**

1	Definition of stress, causative factors, reflections to animal performance and health.
2	Learning precautions must be taken against to stress factors and practical applications suggested for preventing it in the field.
3	Considerations must be taken against to stress factors in animals.
4	Classification of environmental stress factors
5	Effect of stress on animal health

**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 nutritonal 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 prevention 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
P1	5		
P3	5		
P13	5	5	5
P15	5		5

