



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Doping and Analysis							
Course Code		VFT661		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	6	Workload	148 (<i>Hours</i>)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		To learn the definition and application of doping drugs, drugs used for the purpose of doping as autonomic nervous system drugs, anabolics, cardiovascular drugs, hormones, vitamins, minerals, diuretics, haemopoetic drugs.							
Course Content		Course Content History, definition and application of doping drugs, drugs used for the purpose of doping as autonomic nervous system drugs, anabolics, cardiovascular drugs, hormones, vitamins, minerals, diuretics, haemopoetic drugs subjects are examined.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Thieme D., Hemmersbach P. (2010). Doping in Sports. Handbook of Experimental Pharmacology, Volume 195, Springer Press
2	Adams H.R. (1995). Veterinary Pharmacology and Therapeutics, Iowa University Press
3	Toutain P-L, Ferran A, Bousquet-Mélou A. (2010). Species Differences in Pharmacokinetics and Pharmacodynamics. Comparative and Veterinary Pharmacology. In: Cunningham F, Elliott J, Lees P, editors: Springer Berlin Heidelberg.

Week	Weekly Detailed Course Contents	
1	Practice	Laboratory presentation
2	Theoretical	History of doping and doping control
	Practice	Research of the history of doping and doping control
3	Theoretical	Androgens and phase II metabolism of androgens and its relevance as well as analysis
	Practice	Analysis of androgens
4	Theoretical	Anabolic androgenic steroids and synthetic anabolic agents
	Practice	Analysis of androgens
5	Theoretical	Nandrolene
	Practice	Analysis of androgens
6	Theoretical	Growth hormone
	Practice	Analysis of androgens
7	Intermediate Exam	Midterm exam
8	Theoretical	Mass spectrometry-based analysis of several doping drugs
	Practice	Mass spectrometry inspection
9	Theoretical	Erythropoietin and analogs. Blood transfusion in sports
	Practice	MS-spectrophotometry inspection
10	Theoretical	Gene doping
	Practice	Inspection of doping drugs.
11	Theoretical	Masking and manipulation
	Practice	Masking and manipulation techniques
12	Theoretical	Some aspects of doping and medication control in equine sports
	Practice	Inspection of doping drugs.
13	Theoretical	Side effects of anabolic androgenic steroids
	Practice	Inspection of side effects of anabolic androgenic steroids
14	Theoretical	Science and the rules governing anti-doping violations



14	Practice	Inspection of side effects of anabolic androgenic steroids
15	Theoretical	Generally assessment
	Practice	Generally assessment
16	Final Exam	Final

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	1	28
Lecture - Practice	14	1	2	42
Seminar	1	15	1	16
Laboratory	10	2	2	40
Midterm Examination	1	10	1	11
Final Examination	1	10	1	11
Total Workload (Hours)				148
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To learn the doping and doping control
2	To be informed about doping drugs
3	To learn analyse the doping drugs
4	To find out and use resources about the profession in the area.
5	To give lectures and/or presentations and discuss with professionals in the area.

Programme Outcomes (Pharmacology and Toxicology (Veterinary Medicine) Doctorate)

1	Gains expert knowledge on field of pharmacology and toxicology in veterinary medicine and, gains expert knowledge on interdisciplinary interaction in pharmacology and toxicology
2	To be equipped with the knowledge to develop original ideas about necessary issues in the field by using of both graduate and expertise levels knowledge, to be able to develop original definitions, products and diagnostic procedures, etc. via deepening and questioning these knowledge.
3	Develops and uses strategies in his/her field of expertise in PhD Program of Pharmacology and Toxicology
4	Reviews, evaluates and interprets any data (field observations, available scientific information etc.) towards a specific purpose.
5	Gains expert knowledge on the function and basic pharmacological features of pharmacology and sub-branches of science, relationship between the drug and poison, pharmacokinetic, effects of the drugs, the dose-intensity and dose-effect relationship.
6	Gains expert knowledge on the function and basic toxicological features of poison, classifications and types of poisoning, toxicokinetic, general principles of treatment of poisoning.
7	Can offer training to technical staff who will work in pharmacology and toxicology laboratory
8	Reach to competence to prepare courses at the undergraduate level
9	Determines and uses laboratory equipment and consumables in a pharmacology and toxicology laboratory.
10	To be able to plan an interdisciplinary project and build team for the known or new defined problems and to manage and complete such a project when necessary.
11	To share his/her knowledge in the field with others by attending at field-related or other congresses, panels, symposiums, workshops, seminars, article discussions and problem solving sessions, etc., and to contribute to the solution in the team by establishing relations with the experts in different fields.
12	To contribute the scientific knowledge in the field via publications in national and international peer-reviewed scientific journals.
13	Takes roles in vocational organizations and institution.
14	Forms ideas to solve complex problems using theoretical and practical information gained throughout the pharmacology and toxicology education.
15	To adopt lifelong learning as a principle and acknowledge that the information gained through research is the most valuable gain.
16	Knows and protects rights of ideas and industrial property (patent right)

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

	L1	L2	L3	L4	L5
P1	5	5	4		
P2	4	4	4	4	
P3	4	4	4	4	



P4	4	4	4		
P5	4	4	4		
P6	4	4	4		
P7	5	5	4		
P8	4	4	4		5
P9	4	4	4		
P10	5	5	5		
P11	4	4	4		5
P12	4	4	4	4	
P13	4	4	4		
P14	4	4	4		5
P15	5	5	5		
P16	4	4	4		

