AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Use of Drugs in Aquaculture and Their Applications								
Course Code	VFT667		Couse Level	Third Cycle (Doctorate Degree)					
ECTS Credit	6	Workload	152 *(Hours)*	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	To be informed about skills about drug use and applications in fishery products.								
Course Content	Introduction to aquaculture, drug application methods, mold, parasitic, bacterial, viral diseases and therapy, anesthetics, drug residues and their influence to human health subjects are examined.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading	
1	Principles and Methods of Toxicology, A. Wallace HAYES, Edward BROTHERS; Ann Arbor Press, 2001.
2	Modern Toxicology, Ernest HODGSON, Patricia E. LEVI; Elsevier, London, 1987.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to fishery products
	Practice	Introduction of aquatic products
2	Theoretical	Basic concepts in fishery products
	Practice	Examination of marine aquaculture
3	Theoretical	Methods of drug application fishery products
	Practice	Examination of marine aquaculture
4	Theoretical	Methods of drug application fishery products
	Practice	Examination of freshwater aquaculture
5	Theoretical	Methods of drug application fishery products
	Practice	Examination of freshwater aquaculture
6	Theoretical	The pharmacokinetics of drugs in aquaculture
	Practice	For analysis of blood taken from fish
7	Theoretical	Article discussion
	Practice	Fish in parenteral drug administration route
8	Theoretical	(Midterm exam) Discussion
	Practice	Fish in parenteral drug administration route
9	Theoretical	The pharmacokinetics of drugs in aquaculture
	Practice	Drug administration via the enteral route fish
10	Theoretical	Permitted the use of drugs in aquaculture
	Practice	Drug administration via the enteral route fish
11	Theoretical	Sweet-sea water products, differences in drug use
	Practice	Residue analysis in aquaculture
12	Theoretical	Drugs and other residues in seafood
	Practice	Residue analysis in aquaculture
13	Theoretical	In fisheries regulations
	Practice	Residue analysis in aquaculture
14	Theoretical	Homework (aquarium fish drug use)
	Practice	Residue analysis in aquaculture

15	Final Exam	Final

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	1	42
Lecture - Practice	14	3.5	2	77
Assignment	1	10	1	11
Midterm Examination	1	8	1	9
Final Examination	1	12	1	13
			Total Workload (Hours)	152
			[Total Workload (Hours) / 25*] = **ECTS**	6
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Learn about drug use in aquaculture, basic concepts, methods of application.
2	Learn about drug residues in aquaculture, human and animal health effects, and the legal regulations.
3	To learn knowledge and propose suggestions on the area
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	4	3			
P2				5	
P3			5	5	
P4	5	5	4		
P5	4				
P8	4	4			5
P9	5	4			

P11			5		5
P12				4	
P13		5			
P14			5		5