AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Drug Use and Administration in Honey Bee Farming								
Course Code	VFT552		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	4	Workload	102 *(Hours)*	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	To teach the importance of apiculture in Turkey, honey bee products, the drugs used in the treatment of bee diseases and regulations.								
Course Content	Basic principles of drug usage in apiculture, drug application methods, and regulations in apiculture 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	40
Final Examination	1	60

Recommended or Required Reading	
1	Kaal, J. (1987) Natural Medicine from Honey Bees (Apitherapy), Kaal's Printing House, Amsterdam.
2	Brown, R. (1993) Bee Hive Product Bible, Paragon Press, Honesdale, Pennsylvania, USA.
3	Kaal, J. (1987) Natural Medicine from Honey Bees (Apitherapy), Kaal's Printing House, Amsterdam.
4	Brown, R. (1993) Bee Hive Product Bible, Paragon Press, Honesdale, Pennsylvania, USA.

Week	Weekly Detailed Course Contents	
1	Theoretical	The importance and the history of apiculture in Turkey
	Practice	Presentation of importance and the history of apiculture in Turkey (queen, worker and male bees)
2	Theoretical	The terms of apiculture
	Practice	Presentation of apiculture producs-I
3	Theoretical	The anatomy, morphology, taxonomy and biology of the honeybee
	Practice	Presentation of apiculture producs-II
4	Theoretical	Apiculture and environment relationship, mobile apiculture
	Practice	Presentation of beehive and beehive types
5	Theoretical	The products of apiculture (honey, pollen, propolis, royal jelly, bee venom)
	Practice	Presentation of bee pollen
6	Theoretical	Introduction of bee diseases and general properties
	Practice	Control of beehive and its examination techniques
7	Practice	Diagnosis of nosema disease and drug administration
	Intermediate Exam	Midterm exam
8	Theoretical	The drugs used in nosema disease
	Practice	Diagnosis of varroa disease and drug administration
9	Theoretical	The drugs used in varroa disease
	Practice	Laboratory examination techniques of European and American foulbrood diseases
10	Theoretical	The drugs used in European and American foulbrood diseases
	Practice	Diagnosis of fungal infections in bees methods and drug administration
11	Theoretical	The drugs used in the treatment of fungal infections in bees
	Practice	Bee autopsies ve parasitic agents
12	Theoretical	The drugs used in the treatment of septicemia and dysentery in bees
	Practice	Websites of apiculture regulations and laws in Turkey
13	Theoretical	The other infections in bees
	Practice	Websites of apiculture regulations and laws in Turkey

14	Theoretical	Drugs used in the treatment of bee paralysis, Acarapis woodi, Braula ceaca and Tropilaelaps clarea in bees
	Practice	Websites of apiculture regulations and laws in the world
15	Theoretical	Discussion
	Practice	Assessment
16	Final Exam	Final

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	1	28
Lecture - Practice	15	1	2	45
Assignment	5	2	1	15
Midterm Examination	1	4	1	5
Final Examination	1	8	1	9
			Total Workload (Hours)	102
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To learn the importance of apiculture in Turkey and honey bee products.
2	To learn the drugs used in the treatment of bee diseases and their applications.
3	To learn the regulations in apiculture.
4	To learn knowledge and propose suggestions on the area.
5	To give lectures and/or presentations and discuss with professionals in the area.

Programme Outcomes *(Veterinary Pharmacology and Toxicology Master's Without Thesis)*	
1	to be able to comprehend expert knowledge on field of pharmacology and toxicology in veterinary medicine
2	to be able to define expert knowledge on interdisciplinary interaction in pharmacology and toxicology
3	to be able to formulate ideas to solve complex problems using theoretical and practical information gained throughout the pharmacology and toxicology education.
4	to be able to integrate and interpret information in the area of pharmacology and toxicology with information in different fields and, if the need arises, provides scientific information and solutions to solve problems.
5	to be able to develop and use strategies in his/her field of expertise in Master's Program of Pharmacology and Toxicology
6	to be able to comprehend methods of obtained and submitted scientific knowledge
7	to be able to analyse current information related to his/her field of expertise (scientific information, procedures etc.) and use them when necessary
8	to be able to apply technological tools in social relationships of vocational and professional environment.
9	to be able to review, evaluate and interpret any data (field observations, available scientific information etc.) towards a specific purpose.
10	to be able to comprehend 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
11	to be able to identify expert knowledge on the function and basic toxicological features of poison, classifications and types of poisoning, toxicokinetic, general principles of treatment of poisoning.
12	to be able to define and use laboratory equipment in a pharmacology and toxicology laboratory.

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	5		
P2	4	4	3		
P3				5	4
P4				4	4
P5	4	5	4		5
P6					5
P8	4	5	4		5
P9				5	5
P10	5	5	4		