



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Pesticides and Analytical Procedures							
Course Code		VFT503		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	4	Workload	94 ( <i>Hours</i> )	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		The structure of pesticides, mechanisms of action to give information about the classification and analysis.							
Course Content		Pesticides in human and animal health, and their place in Toxicology, structure-activity relationship of chemical structure-source relationship, and pesticides are classified according to the kind of interference assumed to act insecticides, molluscisids, fungicides and herbicides by examining the effects of their domain, forms, methods of analysis to their clinical use shapes and their practical evaluation.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Individual Study					
Name of Lecturer(s)		Prof. Ferda AKAR, Prof. Murat BOYACIOĞLU							

### Assessment Methods and Criteria

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

### Recommended or Required Reading

1	Hayes, WA (2007) Principles and Methods of Toxicology, 5th Edition, Taylor and Francis, London.
2	Klaassen, C. (2008) Casarett & Doull's Toxicology: The Basic Science of Poisons, 7th Edition, McGraw-Hill Companies, USA.
3	Hodgson, E (2010) A textbook of modern toxicology, 4 th Edition, John Wiley and Sons, Inc., Hoboken, Canada.
4	Casarett & Doull's Toxicology - The Basic Science of Poison. McGraw-Hill Press

Week	Weekly Detailed Course Contents	
1	Practice	Laboratory safety and materials (thin layer chromatography (TLC) system, high pressure liquid chromatography (HPLC) system, spectrophotometers, sterilizers, refrigerated centrifuge, rotavapor, distilled water, equipment, incubators, precision scales, water bath, routine tools and equipment, etc.), presentation , use and disclosure
2	Theoretical	Factors affecting the development of fungi and mycotoxin synthesis
	Practice	Precision weighing, unit conversion, to prepare the solution for analysis, and calculation of the amount of the assay done-I
3	Theoretical	Effect modes of mycotoxins
	Practice	Precision weighing, unit conversion, to prepare the solution for analysis, determination of the amount and calculation of modified-II
4	Theoretical	Effect modes of mycotoxins
	Practice	Precision weighing, unit conversion, to prepare the solution for analysis, determination of the amount and calculation of modified-II
5	Theoretical	Aspergillus toxins-I
	Practice	Processing of the samples for laboratory analysis, evaluation and preparation of reports
6	Theoretical	Aspergillus toxins-II
	Practice	Mycotoxin analysis - I (legal regulations regarding the use of mycotoxin analysis, analysis methods, sample preparation, reagents, and solution preparation)
7	Practice	Mycotoxin analysis - II (extraction stage of the analysis of mycotoxin)
	Intermediate Exam	Midterm exam
8	Theoretical	Penicillium toxins-I
	Practice	Mycotoxin analysis - III (mycotoxin analysis concluded, evaluation and comparison with the advanced methods of analysis)
9	Theoretical	Penicillium toxin-II
	Practice	Sample analysis at ITK-I Preparation and implementation of the samples and standards
10	Theoretical	Fusarium toxins-I
	Practice	Sample analysis at ITK-II Reading and evaluating the results of chromatographic data



11	Theoretical	Fusarium toxins-II
	Practice	HPLC analysis of the sample (validation)-I Sample preparation and the preparations made prior to chromatographic analysis. Preparation of standards and the creation of a standard curve
12	Theoretical	Other mycotoxins
	Practice	HPLC analysis of the sample (validation)-II Sample analysis by HPLC, chromatographic data reading and interpretation of results
13	Theoretical	Mycotoxins in control-I
	Practice	Sample analysis by ELISA-I Preparation and implementation of the samples and standards
14	Theoretical	Mycotoxins control-II
	Practice	Sample analysis by ELISA-II Reading and evaluation of results
15	Theoretical	Discussion
	Practice	General evaluation
16	Final Exam	Final

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	1	42
Lecture - Practice	15	1	2	45
Midterm Examination	1	3	1	4
Final Examination	1	2	1	3
Total Workload (Hours)				94
[Total Workload (Hours) / 25*] = ECTS				4

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	To obtain information on pesticides.
2	Learn about the methods and methods of analysis of pesticides.
3	To obtain information on the classification of pesticides.
4	To learn knowledge and propose suggestions on the area
5	To find out and use resources about the profession in the area.

### Programme Outcomes (Veterinary Pharmacology and Toxicology Master)

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		
P3				5	



P4				4	
P5	4	5	4		
P6					5
P7					4
P8	4	5	4		
P9				5	5
P10			5		
P11	5	5			

