AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Method Development and Validation in Pharmacological and Toxicological Analysis								
Course Code	VFT557		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	4	Workload	95 *(Hours)*	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	The purpose of this course, pharmacological and toxicological analyzes, and information about the method development and validation of this method to teach.								
Course Content	Pharmacology and toxicology analysis methods, chromatographic methods, chromatographic methods, method development, method validation of chromatographic methods.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), 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	Veterinary Pharmacology and Therapeutics, 8th Edition, Jim E. Riviere (Editor), Mark G. Papich (Editor), 2009.
2	Modern Pharmacology, 6th Edition, Lippincott Williams and Wilkins, 2004 (Ed. C.R. Craig and R.E. Stitzel)
3	Basic and Clinical Pharmacology, 9th Edition, McGraw-Hill, New York, 2004 (Ed. B. Katzung)
4	Goodman and Gilman's The Pharmacological Basis of Therapeutics 11th Edition, McGraw-Hill, 2006 (Eds. Brunton, Lazo, Parker, Buxton and Blumenthal)

Week	Weekly Detailed Course Contents	
1	Theoretical	Pharmacology and toxicology analysis methods
	Practice	The materials used in pharmacology and toxicology analysis
2	Theoretical	Chromatographic methods
	Practice	TLC application
3	Theoretical	GC and HPLC
	Practice	Parts of the introduction of GK
4	Theoretical	Liquid-phase extraction methods
	Practice	Introduction to HPLC components
5	Theoretical	Solid phase extraction methods
	Practice	HPLC-conditioning
6	Theoretical	Linearity calculation and preparation of reference standards
	Practice	HPLC application
7	Theoretical	Calculation of the ratio of buy-back
	Practice	HPLC application
8	Intermediate Exam	Mid-term exam
9	Theoretical	LOD and LOQ calculations
	Practice	GK application
10	Theoretical	Detection range, and precision (precision) calculation
	Practice	GK application
11	Theoretical	Linearity, Specificity / Selectivity
	Practice	chromatogram evaluation
12	Theoretical	To determine the sensitivity and Reality
	Practice	chromatogram evaluation
13	Theoretical	Reproducible results, the calculation
	Practice	Liquid-liquid phase extraction
14	Theoretical	preparation of SOPs

14	Practice	The solid-liquid phase extraction
15	Theoretical	discussion
	Practice	discussion
16	Final Exam	Final

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	1	28
Lecture - Practice	15	1	2	45
Midterm Examination	1	5	1	6
Final Examination	1	15	1	16
			Total Workload (Hours)	95
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Pharmacology and toxicology analysis methods
2	Chromatographic methods
3	Chromatographic methods, method development
4	Chromatographic method validation methods on the knowledge and skills.
5	To find out and use resources about the profession 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 Toxicolog
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	3	3	3	3	
P5	3	3	3	3	
P6					5
P7					5
P9					5
P12	5	5	5	5	