



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biotechnology in Pharmacology							
Course Code		VFT636		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	4	Workload	94 (Hours)	Theory	1	Practice	0	Laboratory	0
Objectives of the Course		Understand the importance of application areas of biotechnology and pharmacology.							
Course Content		Pharmacology in the application areas of biotechnology and the importance of pharmacology, pharmaceutical biotechnology, new composite of DNA technology, monoclonal antibodies, biotechnology and new drug delivery systems for pharmaceutical dosage forms and biotechnology products approved in review.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study					
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	An introduction to biotechnology
2	Theoretical	Pharmaceutical biotechnology
3	Theoretical	New compound - DNA relationship
4	Theoretical	Monoclonal antibodies
5	Theoretical	Biotechnology products, features
6	Theoretical	Biotechnology products are used
7	Theoretical	Article discussion
8	Intermediate Exam	Midterm exam
9	Theoretical	Biotechnology products, dosage forms
10	Theoretical	Biotechnology products, drug delivery systems
11	Theoretical	Receiving approval of biotech products
12	Theoretical	Biotechnological hormones and growth factors
13	Theoretical	Biotechnology products in the field of Veterinary Medicine
14	Theoretical	Homework (to biotechnology in treatment recommendations) discussion
15	Theoretical	Article discussion
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	1	56
Assignment	7	3	1	28
Midterm Examination	1	4	1	5



Final Examination	1	4	1	5
Total Workload (Hours)				94
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Application areas of biotechnology and pharmacology , importance of having information about pharmaceutical biotechnology
2	New compound DNA technology, monoclonal antibodies, and the biotechnology, pharmaceutical dosage forms for the recognition of new biotechnological products approved drug delivery systems
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	5	4			
P2				4	
P3	4	4	4	4	
P4			4		
P6	5	5			
P8	4	4			4
P11			4		4
P12	4	5		4	
P14	4	5	4		4

