AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Electrophysiological Methods						
Course Code	VFZ627		Couse Level	Third Cycle (Doctorate Degree)			
ECTS Credit	6	Workload	150 *(Hours)*	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	To have information about the recordings at the graduate level using the devices in the electrophysiology laboratory						
Course Content	Recording of striated muscle and smooth muscle activity, determination of nerve conduction velocity using the in vivo and in vitro methods in nerves, electrocardiograph						
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	38
Final Examination	1	60
Quiz	4	1
Term Assignment	1	1

Recommended or Required Reading

1	1. Easy EMG, Rolla Couchman (2004). Elsevier Inc,, USA.
2	2. Martin M. (2007). Small Animal ECG's. An introductory guide. 2nd Ed. Blackwell Publishing Ltd
3	3. Barany M. (1996). Biochemistry of Smooth Muscle Contraction. Academic Press.

Week	Weekly Detailed Course Contents	
1	Theoretical	The use of the ECG in veterinary medicine
	Practice	ECG devices
2	Theoretical	Nomenclature
	Practice	ECG standardization
3	Theoretical	Electrodes and leads
	Practice	ECG recording
4	Theoretical	Sections of normal ECG
	Practice	Interpretation of ECG
5	Theoretical	Definition and history of EMG
	Practice	Overview of research on nerve conduction
6	Theoretical	Nomenclature of the ENMG studies
	Practice	The stimulus and latency in ENMG
7	Theoretical	Sensory and motor conduction velocities
	Practice	H reflex
8	Theoretical	Midterm
	Practice	Midterm
9	Theoretical	EMG in the waves
	Practice	EMG machine and the general features
10	Theoretical	Reducing artifacts
	Practice	Stimulating and recording electrodes
11	Practice	Action potential
12	Theoretical	Action potantial
	Practice	EMG in the different animals II
13	Theoretical	In vitro nerve conduction studies
	Practice	Isolated nerve preparations and nerve conduction velocity

14	Theoretical	Smooth muscle
	Practice	Recording of smooth muscle movements using isolated organ bath
15	Theoretical	Presentations
	Practice	Galvanic skin response, data evaluation

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	1	28
Lecture - Practice	14	2	2	56
Assignment	4	2	1	12
Term Project	1	24	1	25
Quiz	4	2	1	12
Midterm Examination	1	6	1	7
Final Examination	1	9	1	10
			Total Workload (Hours)	150
		[Total Workload (Hours) / 25*] = **ECTS**		6

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	1. To have information about ECG recording in the different animals
2	2. To use ECG device
3	3. Interpretation of ECG recording
4	4. EMG device
5	5. Interpretation of EMG recording

Programme Outcomes *(Physiology (Veterinary Medicine) Doctorate)*

1	Has a deep and broad knowledge about the field and the interdisciplinary area related with the field through the achievements gained in undergraduate and professional levels
2	Has the knowledge to create original ideas, analyze them and develop definition/product/diagnosis methods by using the knowledge gained in undergraduate and/or professional experience, when needed
3	Is knowledgeable about theories and practices in methodological and scientific research methods to run an independent research
4	Excels in the laboratory, clinical and similar fields by using the theoretical and practical information gained in former education, and has the ability to create solutions in related fields
5	Designs and develops scientific methodology for the advanced level/newly defined/emerged problems about the field
6	Excels in the known scientific methods in the field for the advanced level/ newly defined/emerged problems
7	Designs unique researches and implements independently
8	Analyzes, synthesizes and evaluates the new ideas in related fields by using critical thinking
9	Plans, creates teams and carries out the interdisciplinary research projects in order to create solutions to the known/newly defined problems
10	Joins to congresses, panels, symposiums, workshops, seminars, article discussions and problem solving sessions in different disciplines, and exchanges information with the other professionals to contribute to the solutions
11	Broadens the borders of scientific information by publishing scientific articles in national and/or international peer-reviewed journals
12	Creates new ideas and methods to contribute to the technological, social and cultural progress, or to help the development of information society by using the theoretical, practical, independent research, abilities responsibly
13	Designs and implements social projects with the awareness of creating an information society
14	Compiles and interprets any type of data (field observation, scientific knowledge etc.) in accordance with the aims
15	Develops and uses strategies about related topics with the field
16	Implements and defends institutional and practical information and abilities in accordance with the needs of the country and the world, and changes when necessary
17	Follows up and uses all the updates about the field (scientific information, legislations etc.), and has the qualification to change them
18	Adopts lifelong learning as a principle and acknowledges that the information gained through research is the most valuable gain

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	2	2	2	2	2
P2	3	3	3	3	3
P4	4	4	4	4	4
P5	3	3	3	3	3
P6	3	3	3	3	3
P7	2	2	2	2	2
P8	3	3	3	3	3
P10	3	3	3	3	3
P11	4	4	4	4	4
P12	2	2	2	2	2
P13	2	2	2	2	2
P14	4	4	4	4	4
P15	4	4	4	4	4
P16	4	4	4	4	4
P17	4	4	4	4	4
P18	4	4	4	4	4