



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Scientific Research Methods							
Course Code		VFZ635		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	2	Workload	50 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		Ways to reach out to scientific knowledge. The existence and necessity of scientific knowledge. Acquisition of scientific knowledge and assessment processes in biological sciences.							
Course Content		The nature and importance of the scientific cycle, critique and the necessity of the scientific theory, the models used in biomedical research: animal models and alternative methods, research methods, basic, applied and clinical research, hypothesis, design, sample size, data analysis, animal welfare and animal rights related to experimental research.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)		Prof. Ferda BELGE							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	38
Final Examination	1	60
Quiz	2	1
Term Assignment	1	1

Recommended or Required Reading

1	Hau J., Van Hoosier, Jr. G.L. (2003). Handbook of Laboratory Animal Science 2nd Ed. Volume II Animal Models. CRC Press.
2	Monamy V. (2009). Animal Experimentation. A Guide to the Issues, Second Edition. Cambridge University Press
3	Brown H., Prescott R. (2006). Applied Mixed Models in Medicine 2nd Ed. John Wiley & Sons Ltd.
4	Marczyk G., David DeMatteo D., Festinger D. (2005). Essentials of Research Design and Methodology. John Wiley & Sons Ltd.
5	Conn M.P. (2008). Sourcebook of Models for Biomedical Research. 2008 Humana Press Inc.
6	Blaxter L., Hughes C., Tight M. (2008). How to Research Third Ed. Open University Press

Week	Weekly Detailed Course Contents	
1	Theoretical	Observation and data collection / classification
2	Theoretical	Referencing and establish a hypothesis
3	Theoretical	Research Types: Observational studies
4	Theoretical	Experimental and methodological research
5	Theoretical	Sample
6	Theoretical	Data types
7	Theoretical	Statistical method which will be determined according to the type of data
8	Theoretical	Midterm
9	Theoretical	Distribution and confidence intervals
10	Theoretical	Error level / Significance levels
11	Theoretical	Data analysis
12	Theoretical	Animal rights and animal welfare
13	Theoretical	Experimental models in laboratory animals
14	Theoretical	Alternative models
15	Theoretical	Presentations



Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Term Project	1	6	1	7
Quiz	2	1	1	4
Midterm Examination	1	4	1	5
Final Examination	1	5	1	6
Total Workload (Hours)				50
[Total Workload (Hours) / 25*] = ECTS				2

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To learn reference search methods
2	To learn the correct use of references
3	To learn and apply biomedical research methods
4	To learn the data types and accumulation and be able to categorize of them
5	Be able to statistically-based data analysis

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
P2	4	4	4	4	4
P3	4	4	4	4	4
P5	3	3	3	3	3
P8	3	3	3	3	3
P9	2	2	2	2	2
P10	3	3	3	3	3
P11	4	4	4	4	4



P12	4	4	4	4	4
P13	5	5	5	5	5
P14	4	4	4	4	4
P15	4	4	4	4	4
P16	3	3	3	3	3
P17	4	4	4	4	4
P18	5	5	5	5	5

