



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Reproduction in the Laboratory Animals							
Course Code		VDJ543		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	4	Workload	100 ( <i>Hours</i> )	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		to have knowledge about reproductive features of laboratory animals which are used in biomedical studies and fertility problems							
Course Content		To teach reproductive features of laboratory animals, reproductive diseases and tretments.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	4	20

### Recommended or Required Reading

1	Alaçam, E. (2002) Doğum ve İnfertilite, Medisan Yayınları, Ankara.
2	Johnston, S.D., Kustritz, M.V.R., Olson, P.N.S. (2001) Canine and Feline Theriogenoiogy, W.B. Saunders Comp., Philadelphia.
3	Noakes, D.E., Parkinson, T.J., England, G.C.W. (2001) Artur's Veterinary Reproduction and Obstetrics, W.B. Saunders Comp., Philadelphia.
4	Hafez, E.S.E. (1993) Reproduction in Farm Animals, Lea & Febiger, Philadelphia.
5	Dinç, D.A. (2008) Ultrason fiziği ve ineklerde reproduktif ultrasonografi, Pozitif Matbaacılık Ltd. Şti, Ankara.
6	J. Kevin KEALY, H. Mc ALLISTER (2005) Diagnostic Radiology and Ultrasonography of the Dog and Cat

Week	Weekly Detailed Course Contents	
1	Theoretical	The importance of reproduction in laboratory animals
	Practice	To introduce laboratory animals, approaching and stabilisation technics
2	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Rabbit
	Practice	Sex determination, reproduction and neonatal care in Rabbit
3	Theoretical	Effective factors on reproduction in Rabbit
	Practice	USG examination of genital tract in Rabbit
4	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Mouse
	Practice	Sex determination of Mouse
5	Theoretical	Effective factors on reproduction in Mouse
	Practice	Reproduction and neonatal care in Mouse
6	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Rat
	Practice	Sex determination in Rat
7	Theoretical	Effective factors on reproduction in Rat
	Practice	Reproduction and neonatal care in Rat
8	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Guinea Pig
	Practice	Sex determination in Guinea Pig
9	Practice	evaluating mid-term examination
	Intermediate Exam	Mid-term examination
10	Theoretical	Effective factors on reproduction in Guinea Pig
	Practice	Reproduction and neonatal care in Guinea Pig
11	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Hamster



11	Practice	Sex determination in Hamster
12	Theoretical	Effective factors on reproduction in Hamster
	Practice	Reproduction and neonatal care in Hamster
13	Theoretical	Anatomy of reproductive organs, sexual cycle, pregnancy diagnosis, parturition and neonatal growing up and care in Gerbil
	Practice	Sex determination in Gerbil
14	Theoretical	Effective factors on reproduction in Gerbil
	Practice	Reproduction and neonatal care in Gerbil
15	Theoretical	Mainly gynaecologic operations of laboratory animals
	Practice	gynaecologic approaches
16	Theoretical	Pregnancy diagnosis methods of laboratory animals
	Practice	USG examination
17	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	4	0	2	8
Reading	14	0	1	14
Midterm Examination	1	6	2	8
Final Examination	1	12	2	14
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	To be able to comprehend mating methods of laboratory animals
2	To be able to comprehend anatomy of reproductive organs in laboratory animals
3	To be able to comprehend reproductive features of laboratory animals
4	To be able to comprehend reproductive management factors (care, feeding and environment) in laboratory animals
5	To be able to comprehend reproductive diseases in laboratory animals
6	To be able to comprehend gynaecologic operations in laboratory animals

### Programme Outcomes (Obstetrics and Gynecology (Veterinary Medicine) Master)

1	Acquiring basic principles and establishing crucial links in the theory and practical aspects in the field of Obstetrics and Gynecology. Getting grip on the animal's reproductive systems, organs, structures and their functional features.
2	Reproductive anatomy of the female animals, embryonic development of the gonads, maturation, cellular and hormonal mechanisms of oogenesis and mechanisms of ovulation and transport of ovum. Sexual cycles of the female animals and their species related differences.
3	Being informed about the fertilisation, early embryonic development, implantation and pregnancy. Fetal development, intrauterine life and detection of risked pregnancies. Learning to deal with the the issues of abortion. Knowing the hormonal and obstetrical aspects of normal parturition. Recognizing dystocia cases and being aware of predisposing and effective etiology of dystocia. Learning the initial approach to dystocia cases and learning to choose the appropriate intervention. Learning to apply the obstetrical methods.
4	Being informed about the puerperium and postpartum periods, learning the physiology and diagnosis and treatment of pathological conditions (metabolic, infectious and traumatic) during the transition period. Learn the ability to perform intrauterine applications. Acquiring right approaches on handling mother and the offspring in the puerperal period. Learning about the care and diseases of the newborn.
5	Gaining experience about the fertility parameters in the farm animals. Being informed about the diagnosis and therapy of infertility cases and management of them in the herd scale. Learning necessary precautions and management practices for establishing the reproductivity as a branch of herd health. Being informed about the effects of nutrition and management on reproduction.
6	Acquiring the knowledge of the hormones and their clinical applications, affecting reproduction directly or indirectly. Learning methods of sexual synchronisation and appropriate timing of insemination or mating. Being able to administer medical and operative contraceptive methods to female animals. Being informed about assisted reproductive techniques.
7	Administering specialized systematic examination of female animals, performing morphologic and functional examination of the female genitalia and mammary glands thus learning the diagnosis of hormonal, infectious, traumatic and tumoral diseases. Gaining skills in surgical therapy or/and elective gynaecological-oncological, udder and teat operations of the related diseases.



8	Having knowledge of the etiology, diagnosis and therapy of mastitis. Learning necessary precautions and management practices to control mastitis incidence in farm animals particularly in dairy enterprises. Having knowledge of etiology, diagnosis and therapy of circulatory disorders and infectious and non-infectious skin diseases.
9	Being informed about frequently used anesthetic methods and anesthetic agents, analgesics, antibiotics, liquid therapy and other medical agents. Gaining skills in solving problems due to reproductive emergency cases, being able to make definitive diagnosis by clinical symptomatic data and administer appropriate therapy in various animal species.
10	Learning methods and principles of scientific research, learn and acquire scientific ethics concept. Being aware of current developments by surveying and analyzing scientific literature. Gaining skills in interpreting classical knowledge of the scientific area to the students and the community.
11	Being able to plan, conduct and accomplish an original scientific study that can deliver novelty, develop a new scientific method or adopt a known method to a new area and present the results as a scientific article, in the area of obstetrics and gynaecology.

**Contribution of Learning Outcomes to Programme Outcomes** 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	3	5	5	5	5	4
P3	3	3				
P7					4	4

