



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		In Vitro Fertilization in Cows							
Course Code		VDJ644		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	1	Practice	0	Laboratory	0
Objectives of the Course		Informed about purpose of in vitro fertilisation in cows, advantages, disadvantages and techniques							
Course Content		In vitro fertilisation technique, advantages and disadvantages in cows							
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	Purpose of in vitro fertilization
2	Theoretical	Advantages and disadvantages of in vitro fertilization
3	Theoretical	Blastogenesis, embryogenesis
4	Theoretical	Superovulation in donor animals
5	Theoretical	Collection of oocytes
6	Theoretical	Collection of oocytes
7	Theoretical	In vitro maturation of gametes
8	Theoretical	Culture of oocytes
9	Intermediate Exam	Intermediate exam
10	Theoretical	Maturation of spermatozoa
11	Theoretical	In vitro fertilisation
12	Theoretical	In vitro fertilisation
13	Theoretical	Culture and hiding of embryos
14	Theoretical	Culture and hiding of embryos
15	Theoretical	General repetition
16	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	4	0	3	12
Reading	14	0	1	14
Midterm Examination	1	5	2	7



Final Examination	1	12	2	14
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	To inform the aim, advantages and disadvantages of in vitro fertilization in cows
2	Knowledge of superovulation techniques
3	Methods of collection of oocytes in domesticated animals
4	Knowledge of oocyte maturation
5	Knowledge of transporting of collected embryos to proper recipients

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

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 risk pregnancies. Learning to deal with 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
P1	4	5	5	5	5
P2	5	4		4	
P3	4			3	3

