REPRODUCTIVE BIOTECHNOLOGY								
1	Course Title:	REPRO	DUCTIVE BIOTECHNOLOGY					
2	Course Code:	VET4507						
3	Type of Course:	Optional						
4	Level of Course:	First Cycle						
5	Year of Study:	4						
6	Semester:	7						
7	ECTS Credits Allocated:	3.00						
8	Theoretical (hour/week):	1.00						
9	Practice (hour/week):	2.00						
10	Laboratory (hour/week):	0	0					
11	Prerequisites:	None	None					
12	Language:	Turkish	Turkish					
13	Mode of Delivery:	Face to f	face					
14	Course Coordinator:	Doç. Dr.	Doç. Dr. BURCU ÜSTÜNER					
15	Course Lecturers:	Prof.Dr.İ Doç.Dr.S	Prof.Dr.İbrahim DOĞAN Doç.Dr.Selim ALÇAY					
16	Contact information of the Course Coordinator:	e-posta: bbaspinar@uludag.edu.tr Telefon: 0224-2941245 Adres: Bursa Uludağ Üniversitesi Veteriner Fakültesi Dölerme ve Suni Tohumlama Anabilim Dalı						
17	Website:							
18	Objective of the Course:	Giving basic information about reproductive biotechnology and showing the possibilities of using reproductive biotechnology in Veterinary Medicine; determining the some practical application fields for improving animal husbandry in the country; providing enough knowledge and practice to the students in this field to apply some reproductive biotechnology techniques						
19	Contribution of the Course to Professional Development:	The stud profession biotechn	The student transfer the knowledge gained in course to the field in professional practices and to support animal breeding methods with biotechnological applications.					
20	Learning Outcomes:							
		1	Basic knowledge in the field of reproductive biotechnology					
		2	In vitro embryo production, cryopreservation of oocytes and embryos, embryo sexing					
		3	Intracytoplasmic sperm injection and chimeric animal production					
		4	Transgenic farm animal production and cloning					
		5	Determining the importance of some practical application fields for improving animal husbandry in the country					
		6						
		7						
		8						
		9						
		10						
21	Course Content:							
		Co	ourse Content:					
Week	Theoretical		Practice					

1	Description of in vitro embryo production (IVP), advantages of IVP, factors affecting the success of IVP.	Presentation of IVF laboratory.						
2	Methods used for oocyte collection from slaughterhouse material: aspiration, slicing, follicle dissection, media used for oocyte wash.	Presentation of chemical agents and medium preparation.						
3	Oocyte and embryo collection from living animals: oocyte and embryo collection by chirurgical method, oocyte collection using ultrasound guided transvaginal oocyte aspiration method (ovum pick-up, OPU).	Oocyte collection.						
4	Maturation of immature oocyte in laboratory conditions (in vitro maturation, IVM).	IVM protocol.						
5	Fertilization of in vitro matured oocytes in the laboratory (in vitro fertilization, IVF), most used methods for the preparation of sperm used for IVF: swim-up and percoll gradient system.	IVM protocol.						
6	Intracytoplasmic sperm injection (ICSI).	IVF protocol.						
7	Classifications of embryos according to the developmental stages: zygote, 2-cell, 4-cell, 8 -cell, 16-cell, morula and blastocyst, morphological evaluation in embryos: excellent, fair, medium, poor.	IVF protocol.						
8	Culture environments for embryo survival after IVF: in vivo and in vitro cultures, media	In vitro culture of embryos.						
Activit	es	Number	Duration (hour)	Total Work Load (hour)				
Theore	of cryopreservation and methods used for	14	1.00	14.00				
Practic	als/Labs	14	2.00	28.00				
Sé <b>l0</b> stu	Brand the patient of oocytes, embryos and	Conventional freezing p	or <b>Geot</b> ore.	15.00				
Homew	vorks	0	0.00	0.00				
Project	methods and advantages of embryo sexing.	0	0.00					
Field S	tudies	0 0.00 0.00						
Midtern	Pexams Pexams	1 Exertion and during proof	15.00	15.00				
Others		0	0.00	0.00				
Final E	taନ୍ତ୍ର in veterinary and medical fields.	1 18.00 18.00						
Total W	/ork Load			90.00				
Total w	ଆଧାଲକୁଣ/ ଜିହିthods used for cloning.			3.00				
ECTS	Credit of the Course			3.00				

Materials: Materials: Materials: animal science / Robert E. Taylor, Thomas G. Field ed. – Upper Saddle River, NJ : Pearson Prentice H 2004. 2. Reproductive technologies in farm animals / Ian – Wallinford, Oxon: CABI Publishing, 2004. 3. Basic biotechnology / edited by Colin Ratledge a Bjørn Kristiansen. – 2nd ed. – Cambridge, UK : Ca University Press, 2004. 4. Bearden, Henry Joe, 1926, Applied animal repr	. – 8th all, Gordon. nd nbridge
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## 23 Assesment

TERM LEARNING ACTIVITIES	NUMBE R	WEIGHT						
Midterm Exam	1	40.00						
Quiz	0	0.00						
Home work-project	0	0.00						
Final Exam	1	60.00						
Total	2	100.00						
Contribution of Term (Year) Learning Activitie Success Grade	es to	40.00						
Contribution of Final Exam to Success Grade	Э	60.00						
Total		100.00						
Measurement and Evaluation Techniques Us Course	sed in the	Exams that including test and classical questions						

## 24 ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16	
ÖK1	5	3	2	3	1	1	2	1	2	2	3	2	0	0	0	0	
ÖK2	3	2	2	3	1	1	1	1	2	3	3	2	0	0	0	0	
ÖK3	3	2	2	3	1	1	1	1	2	3	3	2	0	0	0	0	
ÖK4	3	2	2	3	1	1	1	1	2	3	3	2	0	0	0	0	
ÖK5	3	2	2	3	1	1	1	1	2	3	3	5	0	0	0	0	
LO: Learning Objectives PQ: Program Qualifications																	
Contrib ution Level:	1 very low				2 low			3 Medium			4 High			5 Very High			