EMBRYOLOGY

1	Course Title:	EMBRYOLOGY
2	Course Code:	VET1010
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	2.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. BERRIN ZIK
15	Course Lecturers:	Prof. Dr. Berrin ZIK Dr. Ögr. Üyesi Sabire GÜLER
16	Contact information of the Course Coordinator:	bzik@uludag.edu.tr Uludağ Ünv. Veteriner Fak. Histoloji Embriyoloji Anabilim Dalı
17	Website:	http://www.veteriner.uludag.edu.tr
18	Objective of the Course:	To investigate the life before birth in domestic animal and before hatching in birds, following zygote and to observe the differences among them
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	Mammals and birds will have prior knowledge about the reproductive system
	2	Gametogenezis learn
	3	Fertilization and learns to divisions according to animal species,
	4	Identify the types of placental mammals and domesticate animals
	5	Implantation learn
	6	Umbilical cord and learns ekstraembriyonal vesicles,
	7	Germ leaves define
	8	Germ of the system learns from leaves,
	9	Identify the causes of congenital malformations,

	10	Learns the embryonic stages and organogenesis

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	It begins with introduced and aim of the lesson, introduced of source books, definition and history of embryology and used terms in embryology	
2	The reproductive system of the female, gametogenesis,, ovulation, genital cycle (ovarian cycle and uterinal cycle), estrous cycle,	
3	The reproductive system of the male, gametogenesis, and internal (accessory glands) and structure of spermatozoa	
4	The transport in the female genital tract of the oocyt and sperm, the fertilization process, the acrosome reactions, zona reaction, gender discrimination	
5	Egg types, cleavage shape according to species and developments following to zygote in amphioxus, frog, mammals and bird	
6	According to species (amphioxus and chorda dorsalis, and the formation of the neural plate, notochord, and neural induction	
7	Development of extra embryonic membranes (chorion, allantois and yolk sac) and umbilical cord. Implantation and placentation according placenta types . Congenital malformations.	
8	Development of central nervous system and neuroblast, neuroglial cells, brain and brain parts. Skin and epidermal organs	
9	Formation of the primary optic vesicle, optic cup, lens, choroid, sclera, cornea and retina. Development of the ears; the outer ear, the middle ear, the inner ear. Development of the skin and epidermoidal structure.	
11	Development of the related organs with oral cavity and the oral cavity; palate, teeth, gingiva, pharynx and pharyngeal pouches, salivary glands, tongue. Formation of pituitary gland, adrenal gland, thyroid, parathyroid gland and thymus.	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	5.00	5.00
Others	2	3.00	6.00
Final Exams	1	7.00	7.00
Total Work Load			65.00
Total work load / 30 hr			2.00
ECTS Credit of the Course			2.00

12	Development of the gastrointestinal tract; foregut, esophagus, stomach, midgut, hindgut, septation of the cloaca. Development of the liver, gallbladder and pancreas. Development of respiratory system; trachea and lungs, pulmonary morphogenesis, formation of alveoli and larynx.	
13	Development of cardiovascular system; Angiogenesis and hematopoiesis. Formation of aortic arches and great arteries, venous systems, heart and lymphatic system.	
14	Development of Urinary systems; Pronephros, mesonephros, metanephros,urogenital sinus. Development of male and female genital system;Formation of primordial germ cells, gonadogenesis, indifferent stage, different stage, external genital organs,mammary glands.	

22	Textbooks, References and/or Other Materials:	1. Editör: Özer A,Yazarlar: Özfiliz N, Erdost H, Zık .Veteriner Embriyoloji (genişletilmiş dördüncü baskı) ISBN 978-9944-77-205-1 2. Çeviri Editörü: Başaklar C. Langman's Medikal Embriyoloji. Palme Yayıncılık, Ankara, 2011 3. Çeviri editörü.: İ. Çelik, Y.Öznurlu. Veteriner Embriyoloji. Medipres yayıncılık, 2011. 4.Color Atlas of Embryology by Ulrich Drews 1995
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	2	10.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	4	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24 ECTS / WORK LOAD TABLE

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	4	2	1	3	2	0	3	0	4	3	0	0	0	0	0
ÖK2	5	4	2	1	3	3	0	0	0	4	3	0	0	0	0	0
ÖK3	5	3	2	1	2	2	0	0	0	4	3	0	0	0	0	0
ÖK4	5	3	1	1	2	1	0	0	0	4	3	0	0	0	0	0

ÖK5	5	0	2	1	2	1	0	0	0	4	3	0	0	0	0	0
ÖK6	5	2	2	1	2	1	0	0	0	4	3	0	0	0	0	0
ÖK7	5	3	4	3	2	5	0	4	0	4	3	0	0	0	0	0
ÖK8	5	1	3	1	2	1	0	0	0	4	3	0	0	0	0	0
ÖK9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**