



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Early Embryonic Development and Embryo Isolation in Avion Embryos							
Course Code		VHE536		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	5	Workload	125 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To have an advanced understanding of embryo development and embryo isolation at stages before the formation of the primitive streak, establishment of the hypoblast and epiblast layers, establishment of germ layers following the formation of the primitive streak and development of somites.							
Course Content		Pre-primitive streak embryo development and embryo isolation, identification of epiblast end hypoblast layers, establishment of embryonal germ layers following the formation of primitive streak, somitogenesis.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Hassa, O., Aşti, R. N. (2003) Embriyoloji.Yorum Matbaacılık, Ankara.
2	Balinsky, B. I. (1975). An introduction to embryology . Saunders, Philedelphia.
3	Kierszenbaum, A. L. (2007) Histology and Cell Biology. An introduction to Pathology, Mosby, Elsevier, Kanada.
4	Wolpert, L. (1998). Principles of development. Current Biology Ltd., New York.

Week	Weekly Detailed Course Contents	
1	Theoretical	Structure and type of the egg cell in birds
	Practice	Introduction to the avian husbandry facility
2	Theoretical	Cleavage divisions and development in birds from ovulation up to egg laying
	Practice	Identification of fertilized and unfertilized egg
3	Theoretical	Cleavage divisions and development in birds from ovulation up to egg laying
	Practice	Identification of fertilized and unfertilized egg
4	Theoretical	Cleavage divisions after the formation of the zygote
	Practice	Steriomicoscopic examination of the avian embryo at early stages of development
5	Theoretical	Changes occurring from blastula formation up the formation of the primitive streak
	Practice	Steriomicoscopic examination of the avian embryo at early stages of development
6	Theoretical	Embryo isolation
	Practice	Embriyo izolasyonu
7	Theoretical	Embryo isolation
	Practice	Embryo isolation
8	Intermediate Exam	Mid-term exam
9	Theoretical	Formation and identification of the epiblast layer
	Practice	Steriomicoscopic examination of the avian embryo
10	Theoretical	Formation and identification of the hypoblast layer
	Practice	Steriomicoscopic examination of the avian embryo
11	Theoretical	Formation of mesoderm and notochord
	Practice	Steriomicoscopic examination of the avian embryo
12	Theoretical	Formation of Canalis neuro-entericus
	Practice	Steriomicoscopic examination of the avian embryo
13	Theoretical	Structures developing from the mesoderm
	Practice	Steriomicoscopic examination of the avian embryo
14	Theoretical	Development of somites



14	Practice	Steriomicroscopic examination of the avian embryo
15	Theoretical	Article discussion
	Practice	Article presentation
16	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	1	1	4	5
Midterm Examination	1	27	1	28
Final Examination	1	35	1	36
Total Workload (Hours)				125
[Total Workload (Hours) / 25*] = ECTS				5

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Learns embryo development at stages before the formation of the primitive streak
2	Learns embryo isolation at stages before the formation of the primitive streak
3	Identifies epiblast end hypoblast layers
4	Learns mechanisms as for the establishment of germ layers following the formation of the primitive streak
5	Gains information on the development of somites.

Programme Outcomes (*Histology and Embryology (Veterinary Medicine) Master's Without Thesis*)

1	Gains expert knowledge on the function and basic histological features of cells, tissues and systems in animals
2	Gains expert knowledge on the stages of embryonal and fetal development in both mammals and birds
3	Comprehends and defines interactions among disciplines related to histology-embryology.
4	Knows national and international laws and regulations concerning histology and embryology.
5	Determines and uses laboratory equipment and consumables in a histology laboratory.
6	Forms ideas to solve complex problems using theoretical and practical information gained throughout the histology/embryology education.
7	Integrates and interprets information in the area of histology/embryology with information in different fields and, if the need arises, provides scientific information and solutions to solve problems.
8	Performs his/her expertise with the recognition of the rights and responsibilities obtained with the completion of the master of Science in histology/embryology.
9	Develop alternative strategies to solve national and international problems in the field of histology/embryology using expert knowledge and expertise in histology/embryology obtained during his/her training, solves them and evaluates the data . If the need arises, takes a part as a team member to solve problems outside his/her field.
10	Takes responsibility in individual and collective work and completes his/her duties. Takes professional and ethical responsibilities.
11	Comprehends methods associated with attainment and presentation of scientific information.
12	Evaluates his/her expert information gained during the master of Science critically and determines new information and sources of information and attends to activities to complement his/her educational deficiencies
13	For his/her professional development, evaluates and uses any available information and activity in his/her studies.
14	If the need arises, gives information and organizes activities to define a problem in his/her field of expertise.
15	Takes responsibilities in professional organizations and committees related to his/her field of expertise.
16	Relying on his/her professional skills and rights, he/she plans and realizes projects with the conciseness of social responsibility. He/she follows the developments in the world and is sensitive to events.
17	In order to maintain his/her professional development and to have social interactions, he/she uses at least one foreign language.
18	Uses advanced technological means that might be necessary for both professional applications and social interactions.
19	Reviews, evaluates and interprets any data (field observations, available scientific information etc.) towards a specific purpose. Develops and uses strategies in his/her field of expertise.
20	Applies and defines his/her expert knowledge with realizing the needs of the region and the country.

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	5	5	5	5	5
P2	2	2	2	2	2
P3	4	4	4	4	4
P5	4	4	4	4	4
P6	3	3	3	3	3
P7	4	4	4	4	4
P8	4	4	4	4	4
P10	4	4	4	4	4
P11	4	4	4	4	4
P12	4	4	4	4	4
P13	4	4	4	4	4
P19	4	4	4	4	4

