



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Osteogenesis								
Course Code	VHE627	Course Level			Third Cycle (Doctorate Degree)				
ECTS Credit	3	Workload	75 (Hours)	Theory	1	Practice	0	Laboratory	0
Objectives of the Course	Bone cells in living organisms, tissue properties of intercellular substance in bones, intramembranous and endochondral ossification, bone formation on dietary factors, heterotopic ossification, and bone fracture repair, and learned to use painting techniques to gain the ability to teach								
Course Content	Bone cells, properties of intercellular substance in bones, intramembranous bone formation, endochondral bone formation, nutritional effects on bone, heterotopic ossification, repair of bone, staining methods of bone section								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study								
Name of Lecturer(s)	Lec. Göksel DOĞAN								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading	
1	Alberts B, Bray D, Lewis J, Raff M, Roberts K, Watson JD. (1989) Molecular Biology of the Cell, Garland Publishing, Inc. London.
2	Banks WJ. (1986) Applied Veterinary Histology, Williams & Wilkins, USA.
3	Dellman HD, Brown LM. (1987) Textbook of Veterinary Histology, Lea & Febiger, USA.

Week	Weekly Detailed Course Contents & Teaching Methods	
1	Theoretical	Bone cells
2	Theoretical	Bone cells
3	Theoretical	Bone cells
4	Theoretical	Properties of intercellular substance in bones
5	Theoretical	Intramembranous bone formation
6	Theoretical	Intramembranous bone formation
7	Theoretical	Endochondral bone formation
8	Theoretical & Practice	Repetition of subjects and Midterm exam
9	Theoretical	Endochondral bone formation
10	Theoretical	Nutritional effects on bone
11	Theoretical	Heterotopic ossification
12	Theoretical	Repair of bone
13	Theoretical	Staining methods of bone section
14	Theoretical	Staining methods of bone section, Article Discussion
15	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	1	13
Midterm Examination	1	20	1	21
Final Examination	1	40	1	41
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes	
1	To be having a knowledge about of bone cells
2	To be having a knowledge about of properties of intercellular substance in bones



3	To be having a knowledge about of , intramembranous and endochondral ossification
4	To be having a knowledge about of nutritional effects on bone
5	To be having a knowledge about of heterotopic ossification, repair of bone, staining methods of bone section

Programme Outcomes (Histology and Embryology (Veterinary Medicine) Doctorate)

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	Based on his/her training during the Master of Science program, he/she has in depth knowledge in the field of histology/embryology as well as in areas related to his/her area of expertise.
4	Using basic knowledge gained during the undergraduate and master of science program, develops ,critically evaluates and tests novel ideas in his/her area of expertise.
5	Endowed with theoretical and practical knowledge as for the scientific research and methodology to be able to conduct an independent research project.
6	Has theoretical knowledge concerning skills (leadership, entrepreneurship, ability to reach information technologies, organization, industrial correspondence etc.). Knows laws and regulations concerning his/her area of expertise and related subjects.
7	Determines and uses laboratory equipment and consumables in a histology laboratory. Has the ability to solve problems in his/her area of expertise.
8	Has the ability to design and develop scientific methodology concerning new developments in his/her area of expertise. Has the ability to put established methods in use to tackle current problems in his/her area of expertise.
9	Designs and conducts an independent research project on his/her own.
10	Critically evaluates and reaches to a synthesis of new ideas in his/her area of expertise and related fields.
11	Uses and develops modern technologies in his/her area of expertise towards the industry in a systematic and critical manner.
12	Performs his/her expertise with the recognition of the rights and responsibilities obtained with the completion of doctorate program in histology/embryology.
13	Is able to break down new and immature ideas into simple components and suggest alternative solutions by using his/her ability to recognize possible relationships among these components.
14	If the need arises, designs an interdisciplinary research project , forms a team, leads and finalizes the research project to solve an old or a new problem in the field of histology/embryology.
15	Attends to activities such as congresses, panels, symposiums, workshops, seminars, journal clubs in his/her area of expertise, shares information in his/her area of expertise and contributes to the solution of a problem by interacting with experts in other fields.
16	Expands a growing body of information in his/her area of expertise by publishing scientific articles in national and international journals.
17	Is in recognition of taking professional and ethical responsibilities.
18	Develop new ideas and methods that has the potential to ignite social and cultural progress or add values to the information society by using practical and theoretical knowledge gained throughout his/her training and his/her skill to work independently and to take responsibilities.
19	Makes the concept of life-long learning a matter of principle and recognizes the fact that evidence-based information is the most important gain of education.
20	Provides information and manages information exchanges on issues of public and animal health in committees with the aim of defining and solving a problem using his/her expertise.

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	3	3	3	3	3
P5	3	3	3	3	3
P14	3	3	3	3	3

