

#### SANA'A UNIVERSITY

# **Course Specification of Veterinary Embryology**

	I. Course Identification and General Information:							
1	Course Title:		Veterinary Embryology					
2	Course Number & Code:	ANT235						
			C.H			Total		
3	Credit hours:	Theoretical	Practical	Training	Seminar			
		1	1			2		
4	Study level/ semester at which this course is offered:	Second Year: Second Semester						
5	Pre –requisite (if any):	ANT233, ANT231						
6	Co –requisite (if any):		Ν	lone				
7	Program (s) in which the course is offered:	В	achelor Veto	erinary Mec	licine			
8	Language of teaching the course:	English						
9	Location of teaching the course:	Faculty of Veterinary Medicine						
10	Prepared by:	Dr. Sale	eh Ahmed M	ohammed /	Ali Alomais	i		
11	Date of approval:							

# **II.** Course description:

The course provided the student with knowledge and skills in the veterinary anatomy and embryology of the general events of embryogenesis as well as organogenesis of body systems in mammals and birds.

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Teaches the students the normal embryological the mechanisms development (gametogenesis, fertilization, cleavage, gastrulation, neurulation, implantation, placentation, organogenesis.

The embryology of animals and the different congenital anomalies at the end of the course they are provided with the knowledge of the general and special embryology to be able to identify the organogenesis of animals and this help in understanding the teratology and its causes.

	III. Intended learning outcomes (ILOs) of the course:				
(A)	(A) Knowledge and Understanding:				
Ali	Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Knowledge and Understanding.				
Program Intended Learning Outcomes (Sub- PILOs) in: Knowledge and Understanding			rse Intended Learning Outcomes ( <mark>CILOs)</mark> in: Knowledge and Understanding		
After ab	completing this program, students will be le to:	Aftei	r completing this course, students will be able to:		
A1-	Demonstrate knowledge and understanding of concepts and principles of general culture, basic science, and supportive to veterinary medicine.	a1-	Identify developmental aspects of the early stages of development, embryogenesis, organogenesis, fetal membranes and late uterine growth, as well as the development of the extra embryonic membranes and placentation.		
A2-	Illustrates basic concepts, principles, and theories related to animal production, animal health and nutrition, behavior management,	a2-	Assess the special embryology of body systems, twining and freemartins in mammals.		

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	breeding and care, and animal-related ethical Bloggs.						
Te	eaching And Assessment Metho	ds F	or Achieving Learn	ing Outcomes:			
	Alignment of Learning Outcomes of Knowledge and Understanding to Teaching and Assessment Methods:						
C	Course Intended Learning Outcomes		Teaching	Methods of			
(CILOs) in Knowledge and Understanding		stra	tegies/methods to be	assessment			
			used				
comp	pleting this course, students will be able to:	-Leo data	ctures using board, shows and	-Written exam -Practical exam			
a1-	Identify developmental aspects of the early stages of development, embryogenesis, organogenesis, fetal membranes and late uterine growth, as well as the development of the extra embryonic membranes and placentation.	data shows and multimedia aids. - brainstorm. - discussion. -Self-learning by preparing essay and presentations (computer and faculty	-Oral exam - Quizzes - Report assignments - Discussion				
a2-	Assess the special embryology of body systems, twining and freemartins in mammals.	-Pra (Clir dem prac disc (a) and (b) exp tea (c) gro (d)	inctical training inical inical inical inical inical inical inical and inical and small inical and small				

# (B) Intellectual Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Intellectual sk

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Prog	ram Intended Learning Outcomes (Sub- PILOs) in Intellectual skills	Course Intended Learning Outcomes (CILOs) of Inte Skills			
After	completing this program, students will be able to:	After	completing this course, studer	ts will be able to:	
B1-	Competently practices analytical and critical thinking skills in studying and assessing health problems and reading the results of animal medical examinations and in related sciences.	b1-	<b>b1-</b> Distinguish the early and late development vertebrates.		
B2-	Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of sick animal.	b2-	<b>b2-</b> Determine the developmental changes in b to the age of the embryo/fetus.		
	Teaching And Assessment Meth	ods F	or Achieving Learning	Outcomes:	
Align	ment of Learning Outcomes of Intellectual Skills t	о Теас	hing Methods and Assessm	ent Methods:	
C	ourse Intended Learning Outcomes (CILOs) in Intellectual Skills.	Теа	ching strategies/methods to be used	Methods of asses	
After	completing this course, students will be able to:	-Lec	tures using board, data	-Written exam	
b1-	Distinguish the early and late developmental stages in vertebrates.	- bra - dis	instorm. cussion.	-Practical exam -Oral exam - Quizzes	
b2-	Determine the developmental changes in body organs to the age of the embryo/fetus.	-Sen essa (con -Pra dem skills (a) villa (b) anii (c) ses (d)	ay and presentations aputer and faculty library) ctical training (Clinical onstrations, practice of s, and discussions). Field visits (farms and ages) General experimental mal teaching Clinical and small group sions Outpatient clinic	- Report assignmen	
repare	ed by Vice Dean For Quality Affairs	Dean	of the Faculty Dea	n of Development	

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(C)	(C) Professional and Practical Skills:					
Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Professional and Practical Skills						
Pr	ogram Intended Learning Outcomes (Sub- PILOs) in Professional and Practical Skills		Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills			
After o	ompleting this program, students will be able to:		Aftei	completing this cours	se, students will be able to:	
C1-	<b>C1-</b> Accurately records a comprehensive pathological story of a sick animal including information on healthy behavior and the necessary checks.		c1-	Examine slides of developed embryonic specimen and apply diagrams of developed organs and systems in frog, birds and mammals		
C2-	C2- Practicing practical, diagnostic, clinical and research skills, including the collection of samples in various fields of veterinary medicine and related sciences, in a safe and effective manner, taking into account the ethics of the profession.			Detect the common developmental defects in animals successfully.		
	Teaching And Assessment Met	hods	For A	Achieving Learning	g Outcomes:	
Alignr	nent of Learning Outcomes of Professional and Practical	Skills to	о Теас	hing and Assessment	Methods:	
(	Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills	Теас	Teaching strategies/methods to be used		Methods of assessment	
After	completing this course, students will be able to:	-Practical training (Clinical demonstrations, practice of skills, and discussions).		training (Clinical ations, practice of I discussions).	Written exam -Practical exam -Oral exam	
c1-	Examine slides of developed embryonic specimen and apply diagrams of developed organs and systems in frog, birds and mammals.	<ul><li>(a) Field visits (farms and villages)</li><li>(b) General experimental animal teaching</li></ul>		visits (farms and ral experimental eaching	<ul> <li>Quizzes</li> <li>Report assignments</li> <li>Discussion</li> </ul>	
c2-	Detect the common developmental defects in animals successfully.	(c) gro (d) - Ca	Clinic up se Outpa se stu	al and small ssions atient clinic dy		

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(D)	General / Transferable Skills:				
Alignm	ent of Course Intended Learning Outcomes (CILOs) to Program Inte	nded L	earning Outcomes (PILOs) in: Ge	eneral and Trans	
Progr	am Intended Learning Outcomes (PILOs) in General / Transferable skills	Со	urse Intended Learning Ou Transfera	tcomes ( <mark>CILOs)</mark> i ble skills	
After c	ompleting this program, students will be able to:	Afte	r completing this course, stud	ents will be able t	
D1-	Communicates effectively with Professional colleagues and animal owners and expresses his ideas clearly and objectively.	d1-	Communicate effectively appropriate communicati	with animal's o on skills.	
D2-	Develops his scientific, professional and research capabilities and follow what is emerging in his field of specialization and using computer applications and information and communication technology.	d2-	<ul> <li>Demonstrate appropriate professional behaviors in different practice situations</li> </ul>		
	Teaching And Assessment Meth	ods	For Achieving Learnin	ng Outcomes	
	Alignment of Learning Outcomes of General and Tra	nsfera	ble skills to Teaching and A	Assessment Meth	
Course	e Intended Learning Outcomes (CILOs) in General and Transferable Skills	Теа	ching strategies/methods to be used	Methods of a	
After completing this course, students will be able to:		-Sel essa (cor	f-learning by preparing ay and presentations nputer and faculty	-Written exam -Practical exam -Oral exam	
d1-	Communicate effectively with animal's owners using appropriate communication skills.	library) - Scientific visits - discussions		<ul> <li>Report assign</li> <li>Discussion</li> </ul>	
d2-	Demonstrate appropriate professional attitudes and behaviors in different practice situations.	- As	signments	- Note performa	
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	a – Theoretical Aspect				
Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	General Embryology. Embryological terms, gametogenesis, fertilization,	a1- a2- b1- b2-c1- c2- d1- d2	-	3	3
2	Embryological terms, cleavage,	a1- a2- b1- b2-c1- c2- d1- d2		1	1
3	Blastula formation and gastrulation in amphioxus, amphibian, birds and mammals.	a1- a2- b1- b2-c1- c2- d1- d2		2	2
4	Formation of fetal membranes	a1- a2- b1- b2-c1- c2- d1- d2		2	2
5	Implantation, placentation and	a1- a2- b1- b2-c1- c2- d1- d2		1	1

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	formation of umbilical cord				
6	Special Embryology development of uro- genital	a1- a2- b1- b2-c1- c2- d1- d2		1	1
7	Special Embryology (development of nervous,	a1- a2- b1- b2-c1- c2- d1- d2		1	1
8	Special Embryology development of digestive, respiratory and cardiovascular systems as well as sense organs and endocrine glands	a1- a2- b1- b2-c1- c2- d1- d2		2	2
9	Special Embryology development of respiratory	a1- a2- b1- b2-c1- c2- d1- d2		1	1
	Number of Weeks /and Units Per Semester				١٤

	b- Training Aspect:			
Order	Training Tasks	CILOs (symbols)	Number of weeks	Contact hours
1	General embryology (embryological terms, Gametogenesis, ovulation, fertilization, cleavage, gastrulation, placentaion	a1- a2- b1- b2-c1- c2- d1- d2	3	6
2	Dissection of the fetus of mammals	a1- a2- b1- b2-c1- c2- d1- d2	2	4
3	Dissection of the embryo of bird	a1- a2- b1- b2-c1- c2- d1- d2	2	4

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4	Preparing embryological slides	a1- a2- b1- b2-c1- c2- d1- d2	2	4
5	Dissection of an deformed fetus	a1- a2- b1- b2-c1- c2- d1- d2	2	4
6	investigation and dissection of placenta and fetal membranes.	a1- a2- b1- b2-c1- c2- d1- d2	3	6
Number of Weeks /and Units Per Semester			14	28

IV. Teaching strategies of the course:			
<ul> <li>Lectures using board, data shows and multimedia aids.</li> </ul>			
<ul> <li>Self-learning by preparing essay and presentations (computer and faculty library)</li> </ul>			
<ul> <li>Brainstorm</li> </ul>			
<ul> <li>Discussion</li> </ul>			
<ul> <li>Cooperative learning</li> </ul>			
<ul> <li>Practical training (Clinical demonstrations, practice of skills, and discussions).</li> </ul>			
(a) Field visits (farms and villages)			
(b) General experimental animal teaching			
(c) Clinical and small group sessions			
(d) Outpatient clinic			
<ul> <li>Tutorial classes (small group teaching)</li> </ul>			
<b>3</b> -Assessment Methods:			
-Written exam			
-Practical exam			
-Oral exam			
-Quizzes			
- Report assignments			
- Discussion			

# V. Schedule of Assessment Tasks for Students During the Semester:

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N	0.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
:	1	Participation quizzes and assignments	1-12	10	10%	a1, a3, b1, b2, b3, c1, c2, c3, d4
2	2	Mid-semester exam	7	10	10%	a1, a3, a4, b1, b2, c2
	3	Practice exam	13	20	20%	a1, a3, b1, b2, b3, c1, c2, c3, d4
!	5	Oral exam	13	5	5%	a1, a3, b1, b2, b3, c1, c2, c3, d4
		Final Exam	16	55	55%	a1, a3, a4, b1, b2, c2
		Total		100	100%	

VI. Students' Support:	
Office Hours/week	Other Procedures (if any)
Saturday-Wednesday from 8:00 a.m2 p.m.	Student can contact me via email

\	VII. Learning Resource (MLA style or APA style)S:
	Required Textbook(s) ( maximum two )
	Developmental Anatomy
	Note boobs
	Recommended Readings and Reference Materials

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NicGeauy, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Kyan, M. T.; Kiroy, D.; and Lonergan, P. (2017).
Veterinary Embryology. John Wiley & Sons, Ltd, second edition, U.K. Pp 232-240, SBN:
9781118940617.
Noden, D.M. and De Lahunta, A. (1985): The embryology of domestic animals
developmental mechanisms and malformations. Williams and Wilkins Baltimore and
London. Pp. 161-170.
Suvarna, S.K., Layton, c. and Bancroft, J.D. (2019): Bancroft's theory and practical of
histological techniques. Eighth ed. Elsevier. China, ISBN: 978-0-7020-6864-5.
Victoria Aspinall , Melanie Cappello (2004);Introduction to Veterinary Anatomy & Physiology.
Essential References
Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species: Development Mechanisms and Malformations.
<ul> <li>Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species: Development Mechanisms and Malformations.</li> <li>McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017): Veterinary Embryology. John Wiley &amp; Sons, Ltd, second edition, U.K. Pp 232-240, SBN: 9781118940617.</li> </ul>
<ul> <li>Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species: Development Mechanisms and Malformations.</li> <li>McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017): Veterinary Embryology. John Wiley &amp; Sons, Ltd, second edition, U.K. Pp 232-240, SBN: 9781118940617.</li> <li>Noden, D.M. and De Lahunta, A. (1985): The embryology of domestic animals developmental mechanisms and malformations. Williams and Wilkins Baltimore and London. Pp. 161-170.</li> </ul>
<ul> <li>Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species: Development Mechanisms and Malformations.</li> <li>McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017): Veterinary Embryology. John Wiley &amp; Sons, Ltd, second edition, U.K. Pp 232-240, SBN: 9781118940617.</li> <li>Noden, D.M. and De Lahunta, A. (1985): The embryology of domestic animals developmental mechanisms and malformations. Williams and Wilkins Baltimore and London. Pp. 161-170.</li> <li>Scheuer, L. and Black, S. (2000): Developmental juvenile osteology. San Diego, Elsevier Acad Press.</li> </ul>
<ul> <li>Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species: Development Mechanisms and Malformations.</li> <li>McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017): Veterinary Embryology. John Wiley &amp; Sons, Ltd, second edition, U.K. Pp 232-240, SBN: 9781118940617.</li> <li>Noden, D.M. and De Lahunta, A. (1985): The embryology of domestic animals developmental mechanisms and malformations. Williams and Wilkins Baltimore and London. Pp. 161-170.</li> <li>Scheuer, L. and Black, S. (2000): Developmental juvenile osteology. San Diego, Elsevier Acad Press.</li> <li>Sperber, G. H. (2001): Craniofacial development. BC Decker Inc Hamilton, London.</li> <li>Smallwood, J.E. and J.F. george II. (1993): Anatomie atlas for computed tomography in the mesaticephalic dog: thorax and abdomen. Vet. Radiol. Ultrasound. Pp.65-84.</li> </ul>

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Veterinary developmental anatomy (2012): Veterinary Embryology class note by Thomas F. Fletcher, DVM, PhD and Alvin F. Weber, DVM, PhD (CVM 6100).
Electronic Materials and Web Sites <i>etc</i> .
Journals:
African veterinary anatomy
Anatomia Histologia Embryologia
Anatomical Record.
JAVMA
Journal of Veterinary Medicine Series C: Anatomia Histologia Embryologia
Italian Journal Of Anatomy And Embryology
Journal of Veterinary Anatomy
Indian journal of veterinary anatomy
JSCVMA
Websites:
http://vetvideos.com/ http://vanat.cvm.umn.edu/ http://www.vet.cornell.edu/oed/horsedissection/search.asp http://www.images4u.com/ http://www.images4u.com/ http://www.ipowerpoint.com/pt/veterinary-anatomy.html http://www.jpowerpoint.com/pt/veterinary-anatomy.html http://bibliodyssey.blogspot.com/2007/10/handbook-of-animal-anatomy.html American Veterinary Medical Association International Veterinary Information Services (IVIS). Vanat.cvm.umn.edu. Vet.net.com - Pub med.
Other Learning Material:

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Х.	Course Policies:
1	Class Attendance:
	MANDATORY TO ATTEND ALL COURSE LECTURES
2	Tardiness:
	Not allowed at all. Students must be in class or in the practical session 10 minutes prior to the beginning of lectures or practical session
3	Exam Attendance/Punctuality:
	Attendance is mandatory; absence is accepted with valid excuse
4	Assignments & Projects:
	All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse
5	Cheating:
	Not tolerated and may lead to <b>EXPELLING</b> the student from the program
6	Plagiarism:
	Not tolerated <b>AT ALL</b> and may lead to <b>EXPELLING</b> the student from the program
7	Other policies:
	1.All devices must be on silent or at least on vibration during lectures/labs
	2.Before any exam (written, oral) we must check student's identity (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.
	3.Any of type/ form of cheating is not allowed no matter what.
	4. Maintain silence during lectures/exam and disturbance is not allowed. For any questions students should raise their hand and wait for permission to talk.

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# **Course Plan of Veterinary Embryology**

I Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Dr. Saleh Ahmed Mohammed Ali Alomaisi	Office Hours					
Location & Telephone No.	Sana'a, Thamar Governorate 776017635	SAT	SUN	MON	TUE	WED	тни
E-mail	alomisy78@gmail.com alomisy78@yahoo.com	8am 2pm	8am 2pm	8am 2pm	8am 2pm	8am 2pm	

VII	I. Course Identification	and General In	formation:				
1	Course Title:		Veterinary Embryology				
2	Course Number & Code:		ANT235				
			C.H			Total	
3	Credit hours:	Theoretical	Practical	Training	Seminar		
		1	1			2	
4	Study level/ semester at which this course is offered:	Se	Second Year: Second Semester				
5	Pre –requisite (if any):		ANT233, ANT231				
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6	Co –requisite (if any):	None
7	Program (s) in which the course is offered:	Bachelor Veterinary Medicine
8	Language of teaching the course:	English
9	System of Study:	Regular / Semesters
10	Mode of delivery:	Lectures and Practical
11	Location of teaching the course:	Faculty of Veterinary Medicine

#### **II.** Course Description:

The course provided the student with knowledge and skills in the veterinary anatomy and embryology of the general events of embryogenesis as well as organogenesis of body systems in mammals and birds.

Teaches the students the normal embryological the mechanisms development (gametogenesis, fertilization, cleavage, gastrulation, neurulation, implantation, placentation, organogenesis.

The embryology of animals and the different congenital anomalies at the end of the course they are provided with the knowledge of the general and special embryology to be able to identify the organogenesis of animals and this help in understanding the teratology and its causes.

#### II. Intended learning outcomes (ILOs) of the course:

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Prof. Dr. Al-Qassim Mohammed Abbas



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#### After completing this course, students will be able to:

a1. Identify developmental aspects of the early stages of development, embryogenesis, organogenesis, fetal membranes and late uterine growth, as well as the development of the extra embryonic membranes and placentation.

a2. Assess the special embryology of body systems, twining and freemartins in mammals.

b1. Distinguish the early and late developmental stages in vertebrates.

b2. Determine the developmental changes in body organs to the age of the embryo/fetus.

c1. Examine slides of developed embryonic specimen and apply diagrams of developed organs and systems in frog, birds and mammals..

c2. Detect the common developmental defects in animals successfully.

d1. Communicate effectively with animal's owners using appropriate communication skills.

d2. Demonstrate appropriate professional attitudes and behaviors in different practice situations.

X. Co	X. Course Content:				
A – Theoretical Aspect:					
Order	Topics List	Week Due	Contact Hours		
1	General Embryology. Embryological terms, gametogenesis, fertilization.	1-3	3		
2	Embryological terms, cleavage.	4	1		
3	Blastula formation and gastrulation in amphioxus, amphibian, birds and mammals.	5	1		

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4	Formation of fetal membranes	6-7	2
5	Mid-Term Exam	8	1
6	Implantation, placentation and formation of umbilical cord	9-10	2
7	Special Embryology development of uro-genital	11	1
8	Special Embryology (development of nervous,	12	1
9	Special Embryology development of digestive, respiratory and cardiovascular systems as well as sense organs and endocrine glands.	13-14	2
10	Special Embryology development of respiratory	15	1
11	Final Exam	16	1
Number of Weeks /and Units Per Semester		16	16

	b- Training Aspect:		
Order	Training Tasks	Week Due	Contact hours
1	General embryology (embryological terms, Gametogenesis, ovulation, fertilization, cleavage, gastrulation, placentaion	1-3	6
2	Dissection of the fetus of mammals	4-5	4
3	Dissection of the embryo of bird	6-7	4
4	Mid-Term Exam	8	2
5	Preparing embryological slides	9-11	6
6	Dissection of an deformed fetus	12-13	4
7	Investigation and dissection of placenta and fetal membranes.	14-15	4

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8	Final Exam	16	2
	Number of Weeks /and Units Per Semester	16	32

KI.	(I. Teaching strategies of the course:				
<ul> <li>Lectures using board, data shows and multimedia aids.</li> <li>Self-learning by preparing essay and presentations (computer and faculty library)</li> <li>Brainstorm</li> <li>Discussion</li> <li>Cooperative learning</li> <li>Practical training (Clinical demonstrations, practice of skills, and discussions).</li> <li>(a) Field visits (farms and villages)</li> <li>(b) General experimental animal teaching</li> <li>(c) Clinical and small group sessions</li> <li>(d) Outpatient clinic</li> <li>Tutorial classes (small group teaching)</li> </ul>					
II. Assessment Methods: -Written exam -Practical exam -Oral exam -Quizzes - Report assignments - Discussion					
	No.	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
	1	Participation quizzes and assignments	1-12	10	10%
	2	Mid-semester exam	7	10	10%

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3	Practice exam	13	20	20%
4	Oral exam	13	5	5%
5	Final Exam	16	55	55%
	Total		100	100%

IX. Learning Resource (MLA style or APA style)S:
1- Required Textbook(s) ( maximum two )
Developmental Anatomy
Note boobs
2- Recommended Readings and Reference Materials
McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017):
Veterinary Embryology. John Wiley & Sons, Ltd, second edition, U.K. Pp 232-240, SBN:
9781118940617.
Noden, D.M. and De Lahunta, A. (1985): The embryology of domestic animals
developmental mechanisms and malformations. Williams and Wilkins Baltimore and
London. Pp. 161-170.
Suvarna, S.K., Layton, c. and Bancroft, J.D. (2019): Bancroft's theory and practical of
histological techniques. Eighth ed. Elsevier. China, ISBN: 978-0-7020-6864-5.
<u>Victoria Aspinall</u> , <u>Melanie Cappello</u> (2004);Introduction to Veterinary Anatomy & Physiology.
3- Essential References
Drew Noden and Alexander De Lahunta (2011): The Embryology of Domestic Species:
Development Mechanisms and Malformations.
McGeady, T. A.; Quinn, P. J.; Fitz Patrik, E. S.; Ryan, M. T.; Kilroy, D.; and Lonergan, P. (2017)
Veterinary Embryology. John Wiley & Sons, Ltd, second edition, U.K. Pp 232-240, SBN 9781118940617.

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Node deve Lond	en, D.M. and De Lahunta, A. (1985): The embryology of domestic animals Hopmental mechanisms and malformations. Williams and Wilkins Baltimore and Ion. Pp. 161-170.
Sche Press Sper	euer, L. and Black, S. (2000): Developmental juvenile osteology. San Diego, Elsevier Acad s. rber, G. H. (2001): Craniofacial development. BC Decker Inc Hamilton, London.
Sma mesa	aticephalic dog: thorax and abdomen. Vet. Radiol. Ultrasound. Pp.65-84.
Suva histo	rna, S.K., Layton, c. and Bancroft, J.D. (2019): Bancroft's theory and practical of logical techniques. Eighth ed. Elsevier. China, ISBN: 978-0-7020-6864-5.
Vete Fletc	rinary developmental anatomy (2012): Veterinary Embryology class note by Thomas F. her, DVM, PhD and Alvin F. Weber, DVM, PhD (CVM 6100).
4- El	ectronic Materials and Web Sites <i>etc</i> .
Jouri	nals:
Afric	an veterinary anatomy
Anat	omia Histologia Embryologia
Anat	omical Record.
JAVN	ЛА
Jouri	nal of Veterinary Medicine Series C: Anatomia Histologia Embryologia
Italia	n Journal Of Anatomy And Embryology
Jour	nal of Veterinary Anatomy
India	an journal of veterinary anatomy
JSC/	/MA
Web	sites:
http:	//vetvideos.com/
http	://vanat.cvm.umn.edu/
http	://www.vet.cornell.edu/oed/horsedissection/search.asp
http	://www.images4u.com/ ://www.vetmed.wsu.edu/ClientED/anatomy/#Cat
http	://www.jpowerpoint.com/ppt/veterinary-anatomy.html
	://bibliodyssey blogspot.com/2007/10/handbook-of-animal-anatomy.html

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American Veterinary Medical Association
International Veterinary Information Services (IVIS).
Vanat.cvm.umn.edu.
Vet.net.com
- Pub med.
- Wikipedia
5- Other Learning Material:

X	XIII. Course Policies:				
1	Class Attendance:				
	MANDATORY TO ATTEND ALL COURSE LECTURES				
2	Tardy:				
	Not allowed at all. Students must be in class 10 minutes prior to the beginning of lectures				
3	Exam Attendance/Punctuality:				
	Attendance is mandatory; absence is accepted with valid excuse				
4	Assignments & Projects:				
	All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse.				
5	Cheating:				
	Not tolerated and may lead to <b>EXPELLING</b> the student from the program				
6	Plagiarism:				
	Not tolerated <b>AT ALL</b> and may lead to <b>EXPELLING</b> the student from the program				

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7	Other policies:
	1.All devices must be on silent or at least on vibration during lectures/labs.
	2.Before any exam (written, practical, oral) student's identity will be checked (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.
	3.Any of type/ form of cheating is not allowed no matter what.
	4. Maintain silence during lectures and disturbance is not allowed.

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