COURSE SPECIFICATION (2018-2019)

First Academic Year - Second Semester (ANE: 1208)

1- BASIC INFORMATION:

Course title:	**Anatomy and Embryology (Special).**
Course code:	**ANE: 1208**
Academic year:	**First academic year - Second semester.**
Program title:	**Bachelor degree of Veterinary Medical Sciences (B.V.Sc.)**
Responsible department:	**Department of Anatomy and Embryology.**
Contact hours/week:	**4 hours/week (lecture: 2 hrs./week - practical: 2 hrs./week).**
Approval date:	**تم اعتماد توصيف المقرر في مجلس القسم رقم ( ) بتاريخ / / ٢٠**

2- PROFESSIONAL INFORMATION:

Overall aims of the course:

This course aims to:

Provide students of the first academic year with essential knowledge about the gross anatomical structure of equine joints, cardiovascular system, pelvic limbs and thorax. In addition to comparative anatomy of respiratory system in different domestic animals.

3- INTENDED LEARNING OUTCOMES OF THE COURSE (ILOs):

a- Knowledge and understanding:

By the end of this course the student should be able to:

a1. Distinguish the principle components of locomotor system with special references to the pelvic limb and thorax.

a2. Mention the anatomical structure of equine joints.

a3. Conclude the typical structure of respiratory system in different domestic animals.

a4. Recognize the principle components, course and distribution of equine cardiovascular system.

a5. Ascertain the surface landmarks of underling bones, muscles, tendons and internal structures (main nerves, vessels and viscera).

B- Intellectual skills:

By the end of this course the student should be able to:

b1. Analyze diversity of knowledge in term of gross anatomical characteristics of each organ.

b2. Identify different surface markings of animal limbs and thorax.

b3. Identify isolated bones of pelvic limbs in different domestic animals.

b4. Predict the effect on limb stance and locomotion caused by paralysis of specific nerves or muscle tendon rupture.

b5. Differentiate between normal and abnormal position and deviated movements and

malformations of different joint in both limbs of equines.

b6. Recognize origin and insertion of different skeletal muscles of equines pelvic limbs and thorax.

b7. Describe the muscles and major named vessels and nerves of equine pelvic limbs and thorax in terms of functional groups.

b8. Determine the normal anatomical structures and topography of organs (respiratory and cardiovascular) in different domestic animals.

b9. Compare between respiratory organs of different domestic animals.

b10. Relate structure-functions of respiratory and cardiovascular system components.

b11. Explain the interrelationships within and between anatomical and physiological systems of the animal's body.

b12. Discuss essential gross anatomical structures of equine joints.

b13. Determine the injection sites and approaches to each joint in equine.

b14. Estimate the problems related to the joints and tendons of horses based on the obtained knowledge about their normal anatomy and position.

c- Professional and practical skills:

By the end of this course the student should be able to:

c1. Detect the shape and position of isolated and assembled bones of pelvic limbs and thorax in different domestic animals.

c2. Coordinate the radiographic anatomy of the pelvic limbs bones and thorax to clarify some field problems.

c3. Draw labeled diagrams of normal anatomical structure of equine joints, bones, muscles, respiratory and cardiovascular system.

c4. Differentiate between isolated bones of pelvic limbs, thorax and lungs of different animals.

c5. Implement surface anatomy knowledge for detection of proper site for intra-articular injection of equine joints.

c6. Detect the lung and heart area for proper clinical auscultation.

d- General and transferable skills:

By the end of studying the course, the student should be able to:

d1. Work in a multidisciplinary team.

d2. Prepare a scientific paper and essay.

d3. Regulate and control tasks and resources.

d4. Communicate effectively and non-verbally.

d5. Utilize computers and internet skills.

4- COURSE CONTENTS AND TOPICS:

Course	Topic	Pract.	Lect.	Total no. of hours
First Year – Second Semester – ANE:1208 Anatomy and Embryology (Special) 4 hours/week (lect. 2 hours/week - pract. 2 hours/week)	1- Special arthrology (joints of thoracic limbs - joints of pelvic limbs - equine stay apparatus).	-	8	8
	2- Gross anatomy of cardiovascular system (heart and coronaries, thoracic aorta - abdominal aorta)	2	10	12
	3- Comparative gross anatomy of respiratory system (nostrils - nasal cavity - pararnasal sinuses - nasopharynx – larynx – trachea - lung - mediastinum - pleura) in different domestic animals.	4	8	12
	4- Comparative features of bones of pelvic limb in different domestic animals (os-coxae – femur - tibia – fibula – tarsus - metatarsus - digits).	6	-	6
	5- Dissection of equine pelvic limbs (muscles of lateral aspect - muscles of medial aspect - blood vessels - nerves).	8	-	8
	6- Dissection of equine thorax (thoracic vertebrae - ribs – sternum- muscles - blood vessels – nerves) - thoracic cavity).	6	-	6
	T o t a l	26	26	52

5-TEACHING AND LEARNING METHODS:

5.1. Lectures (brain storming and discussion) in which one or more of the following facilities are used:

5.1.1. White board, PowerPoint slides and recorded anatomy videos (data-show presentations).

5.1.2. Bones (pelvic limbs, thoracic vertebrae, ribs and sternum) and preserved anatomical specimens (equine heads, larynx, trachea, lungs and heart).

5.1.3. Illustrations and anatomical charts.

5.2. Laboratory sessions in which one or more of the following facilities are used:

5.2.1. Tutor presentation followed by students' small group sessions.

5.2.2. Freshly dissected animal (donkeys) specimens

5.2.3. Prepared bones (pelvic limbs, thoracic vertebrae, ribs and sternum) from euthanatized animals.

5.2.4. Dissected specimens of equine (pelvic limbs, thorax) and other domestic animals (lungs).

5.3. Independent (laboratory and home assignments supervised by tutors):

5.3.1. Writing essays and assignments (computer researches and faculty library attendance).

5.3.2. Preparation of colored posters and slide presentations.

5.3.3. Preparation of bones and preserved specimens.

5.3.4. Group discussion.

6- TEACHING AND LEARNING METHODS FPR STUENTS WITH DISABILITES:

N.B. Students with physical disabilities are non-applicable in the faculty.

While students with learning difficulties:

-The students are encouraged to contact department staff members in their announced office hours to discuss their individual needs for learning accommodation that may affect their ability to participate in course activities or meet the course requirements.

-At end of the practical sessions, overall courses revision was done for all student groups to overcome the problem of non-attendance in any practical session.

7-STUDENTS ASSESSMENT:

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/Assessments methods			
	K&U	I.S	P&P.S	G.S
Written exam	a1-a5	b1, b8, b9, b10, b11, b12, b13, b13	c3, c5	-
Practical exam	a1-a5	b1, b2, b3, b4, b5, b6, b7, b9, b13	c1, c2, c4, c6	d3
Oral exam	a1-a5	b1, b4, b7, b8, b9, b10, b11, b12, b13, b14	-	d4
Student activities	--	-	-	d1-d5

7.2. Assessment schedules/semester:

Method	Week(s)
Written exam	At the 15th week, managed by faculty administration.
Practical exam	At the 14th week, managed by department administration.
Oral exam	At the 15th week, managed by department administration.
Student activities	Along the semester, supervised by department staff members.

7.3. Weight of assessments:

Assessment	Degrees	Weight
Written exam.	25	50%
Practical exam.	10	20%
Oral exam.	10	20%
Student activities	5	10%
Total	50	100%

8- LIST OF REFERENCES:

8.1. Department notes:

8.1.1. Textbook of veterinary anatomy, first year students, (deposit # at International Egyptian library and archives) – prepared by staff members of anatomy and embryology department, faculty of veterinary medicine, Beni-Suef University.

8.1.2. Practical courses of veterinary anatomy, first year students, (deposit # at International Egyptian library and archives) – prepared by staff members of anatomy and embryology department, faculty of veterinary medicine, Beni-Suef University.

8.2. Essential textbooks:

(Available in library of faculty of Veterinary Medicine, Beni-Suef University).

8.2.1. Sisson and Grossman's the anatomy of the domestic animals, 5th ed. (Getty, R., 1975), published by W.B. Saunders Company, Philadelphia, London and Toronto. ISBN: 0-7216-4102-4- vol.1 and 0-7216-4107-5- Vol.-2.

8.2.2. Anatomy and physiology of farm animals. 4th ed. (Frandson, R.D., Wilke, W.l. and Fails, A.D., 2003), Lippicott Williams and Wilkins, Awolters Kluwer Company, ISBN: 0-7817-3358-8.

8.2.3. Clinical dissection guide for large animals, horse and large ruminants, 2nd ed. (Constantinescu, G.M. and Constantinescu, I.A., 2004), published by Iowa State Press, ISBN:0-8138-0319-5.

8.2.4. Miller's anatomy of the dog (Evans, H.E. and Christensen, G.C., 1979), W.B. Saunders Company, Philadelphia, London, Toronto, Mexico city, Rio de -Janeiro, Sydney and Tokyo, ISBN:0-7216-3438-9

8.2.5. Anatomy of the horse, an illustrated text, 2nd ed. (Budras, K.D., Sack, W.O. and Röck, S., 1994), Mosby work. Hanover Germany, ISBN: 07234-19213.

8.2.6. Bovine anatomy, an illustrated text, 1st ed. (Budras, K.D., Habel, R.E., Wiinsche, A. and Buda, S. 2003), Hanover, Germany, ISBN: 3-89993-000-2.

8.2.7. Text book of veterinary anatomy (Dyce, K.M.; Sack, W.O. and Wensing, C.J.G.1987), Saunders Co., Philadelphia, London, Toronto, Montreal, Sydney, Tokyo, ISBN: 0-7216-1332-2.

8.2.8. The Embryology of the domestic animals, developmental mechanisms and malformations (Nodern, D.M. and De-Lahunta, A.1986), Williams and Wilkins, Baltimore, London, Los Anglos, Sydney, ISBN: 0-683-06545-9.

8.3. Recommended textbooks: *(Available online via GOOGLE search)*.

8.3.1. Anatomy of the horse, fifth, revised edition (Klaus-Dieter Budras W.O. Sack Sabine Röck, 2009), Schlütersche Verlagsgesellschaft mbH & Co. KG., Hans-Böckler-Alle 7, 30173 Hannover, printed in Germany, ISBN 978-3-89993-044-3.

8.3.2. Textbook of veterinary anatomy, fourth edition (K.M. Dyce, C.J.G. Wensing), Saunders elsevier, 3251 Riverport Lane, St. Louis, Missouri, 63043, ISBN: 978-1-4160-6607-1.

8.3.3. Miller's anatomy of the dog, fourth edition (H.E. Evans, A. de-Lahunta, 2011), Saunders elsevier, 3251 Riverport Lane St. Louis, Missouri 63043, ISBN: 978-143770812-7.

8.3.4. Essentials of domestic animal embryology, first edition, (Hyttel, P., Sinowatz, F. and

Vejlested, M., 2010), Saunders Elsevier, Edinburgh, London, New York, Oxford, Philadelphia, St Louis, Sydney, Toronto, ISBN: 978-0-7020-2899-1.

8.4. Journals, Websites …….. etc.

8.4.1. Journals:

1. Anatomia, Histologia, Embryologia - Wiley Online Library: http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1439-0264
2. The Anatomical Record - Wiley Online Library: http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1932-8494
3. Journal of Anatomy- Wiley Online Library http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1469-7580
4. Annals of Anatomy - Journal-Elsevier: http://www.journals.elsevier.com/annals-of-anatomy/
5. Journal of Veterinary Anatomy: http://www.vetanat.com/
6. Indian Journal of Veterinary Anatomy:http://epubs.icar.org.in/ejournal/index.php/IJVA
7. International Journal of Animal Anatomy and Physiology http://internationalscholarsjournals.org/journal/ijaap

8.4.2. Websites

1- Google search: www.google.com 2- Science Direct: http://www.sciencedirect.com.
3- PubMed: http://www.Pubmed. 4- YouTube: www.youtube.com
5- The University of Adelaide: https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/
6- Veterinary anatomy courses: http://vanat.cvm.umn.edu/vanatCourses/CVM6100.html
7- Anatomy museum: http://skeletonmuseum.com/
8- Animals skeletons: -www.animalskeletons.net
9- VET Veterinary Educational Tools: http://www.cvmbs.colostate.edu/vetneuro/
10- Sheep brain dissection guide: http://academic.uofs.edu/department/psych/sheep/
11- Veterinary anatomy: http://vetmedicine.about.com/od/anatomy/
12- Online Veterinary Anatomy Museum: http://www.onlineveterinaryanatomy.net/
13- Imaging Anatomy Website: http://vetmed.illinois.edu/courses/imaging_anatomy/
14- Real 3D anatomy: http://www.real3danatomy.com/
15- Interactive Programs for Canine Anatomy: http://www.tabanat.com
16- Virtual Canine Anatomy: http://www.cvmbs.colostate.edu/vetneuro/VCA3/vca.html
17- Veterinary anatomy museum: http://vanat.cvm.umn.edu/museum/
18- Veterinary neurobiology laboratory preview/review: http://vanat.cvm.umn.edu/neurolab/
19- Carnivore and developmental anatomy lectures: http://vanat.cvm.umn.edu/TFFlect.html
20- Rooney's guide to the dissection of the horse: http://www.vet.cornell.edu/oed/horsedissection/
21- Interactive drawings for veterinary anatomists: http://www.images4u.com/
22- Veterinary anatomy: directions and planes: http://vanat.cvm.umn.edu/anatDirections/

Course Coordinator
Dr. Mohamed Kamal Merai

Head of the department
Dr. Mohamed Gomaa Tawfiek

MATRIX OF COURSE CONTENTS AND INTENDED LEARNING OUTCOMES (ILOS)

Course	Topics	Week	Intended learning outcomes (ILOs)			
			K&U.S (a)	I.S (b)	P&P.S (c)	G&T.S (d)
First Year – Second Semester – ANE:1208 Anatomy and Embryology (Special) 4 hours/week (lect. 2 hours/week - pract. 2 hours/week)	1- Special arthrology (joints of thoracic limbs - joints of pelvic limbs - equine stay apparatus).	1, 2, 3, 4	a1, a2	b1, b4, b5, b11, b12, b13, b14	c2, c3, c5	d1, d2, d3, d4, d5
	2- Gross anatomy of cardiovascular system (heart and coronaries, thoracic aorta - abdominal aorta)	5, 6, 7, 8, 9	a4	b1, b7, b8, b10, b11	c3, c6	
	3- Comparative gross anatomy of respiratory system (nostrils - nasal cavity - pararnasal sinuses - nasopharynx – larynx – trachea - lung - mediastinum - pleura) in different domestic animals.	10, 11, 12, 13	a3	b1, b8, b9, b10, b11	c3, c4, c6	
	4- Comparative features of bones of pelvic limb in different domestic animals (os-coxae – femur - tibia – fibula – tarsus - metatarsus - digits).	1, 2, 3	a5	b1, b2, b3, b11	c1, c2, c3, c4, c5	
	5- Dissection of equine pelvic limbs (muscles of lateral aspect - muscles of medial aspect - blood vessels - nerves).	4, 5, 6, 7	a5	b1, b2, b6, b7, b11	c3, c5	
	6- Dissection of equine thorax (thoracic vertebrae - ribs – sternum- muscles - blood vessels – nerves) - thoracic cavity).	11, 12, 13	a5	b1, b2, b6, b7, b11	c2, c3, c6	