Module title:	Radiographic anatomy of dog and cat	**ECTS**	**1**
Polish translation:	Anatomia radiologiczna psów i kotów		
Course:	**Veterinary Medicine**		

Module language: English		Stage: JM-FVM	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☐ basic ☒ directional ☒ mandatory ☐ elective	Semester: 7	☐ winter semester ☒ summer semester
Academic year:	**2023/2024**	Catalogue number:	FVM-V-JMSS-07W-ED03_23

Module coordinator:	Małgorzata Domino DVM, PhD, DSc
Teachers responsible for the module:	Academic teachers of the Institute of Veterinary Medicine; Department of Large Animal Disease and Clinic; Visiting professors; PhD students in accordance to the internal legal acts; other specialists in the field of study
Unit responsible for the module:	Institute of Veterinary Medicine, Department of Large Animal Diseases and Clinic
Faculty in charge:	Faculty of Veterinary Medicine
Objectives of the module:	The course aims to familiarize students with the principles and radiological nomenclature of small animal radiology with particular consideration of normal variation within dogs and cats. The course aims to prepare students for the proper use of radiological nomenclature and the proper recognition of normal anatomical structures on radiological images. <u>Lectures (15x1 hour):</u> 1. Basics of X-ray image formation and orientation to prepear the proper image description. 2. Basics of X-ray views - the effect of small animal age, breed, and morphological type on the position and conformation of descriptive structures. 3. Radiographic anatomy of head - skull, oral cavity, teeth. 4. Radiographic anatomy of head and neck - nasal cavities, sinuses, larynx, trachea. 5. Radiographic anatomy of spine. 6. Radiographic anatomy of thorax - bronchi and lung. 7. Radiographic anatomy of thorax - diaphragm, mediastinum, and pleural cavity. 8. Radiographic anatomy of thorax - heart and blood vessels. 9. Radiographic anatomy of abdomen - gastrointestinal tract. 10. Radiographic anatomy of abdomen - Glands. 11. Radiographic anatomy of abdomen - Urinary tract. 12. Radiographic anatomy of abdomen - Reproductive tract. 13. Radiographic anatomy of limbs - limbs of growing dogs and cats. 14. Radiographic anatomy of limbs - thoracic limbs of adult dogs and cats. 15. Radiographic anatomy of limbs - pelvic limbs of adult dogs and cats.
Teaching forms, number of hours:	a) Lectures: 15 hours
Teaching methods:	Lectures: original multimedia presentations prepared by academic teachers;
Formal prerequisites and initial requirements:	Passing the courses: Animal anatomy, Comparative anatomy, Topographic anatomy, and Animal physiology

Learning outcomes:	Knowledge: 01 - the student knows the nomenclature of anatomical structures, organs, and their descriptive parts in the radiological image; 02 - the student knows the terms determining body axes, directions, and position of anatomical structures, organs, and their descriptive parts on the radiological image; 03 - the student knows the basic radiological views and their application in clinical practice; 04 - the student knows the species-specific, morphotypes, and racial differences of anatomical structures, organs, and their descriptive parts in the radiological image.	Skills: 01 - the student can arrange the radiological image for image evaluation; 02 - the student can choose a common imaging technique for the clinical situation; 03 - the student can name the anatomical structures, organs, and their descriptive parts visible in the radiological image.	Competences: 01 - the student is aware of the interdisciplinary importance of morphological knowledge in the process of animal health assessment ; 02 - the student is ready to application of morphological knowledge in professional life; 03 - the student is ready to application of morphological knowledge in the critical analysis of radiological images; 04 - the student is aware of the need for continuing education

			and is ready to deepen his/her knowledge using scientific sources .
Assessment methods:	Effects - knowledge: 01, 02, 03, 04; skills: 01, 02, 03; and competences: 01, 02, 03, 04. Written exam in the form of a mixed test, a total of 20 to 40 questions (open, to be completed and single/multiple choice). The exam covers all content of the semester. Students have to obtain a minimum of 51% points to pass the exam. The dates of the exam take place in the same form. Apart from the indicated methods of verification of learning outcomes, no additional are envisaged. In a top-down situation, suspending the implementation of classes at the university and the need for distance learning, other methods of verifying the learning outcomes implemented are appropriate to the situation.		
Formal documentation of learning outcomes:	Written test, written exam. Entry into the eHMS system and documentation contained in the 'Course File' (individual student assessment cards, attendance lists, the pool of questions for written and oral forms, students' essays)		
Elements impelling final grade:	To verify the learning outcomes: 1. attendance at lectures, 2. exam grade; for each of the elements (2-4) the maximum number of points to be obtained (100 points in total) is determined; attributing the appropriate weight to each of these elements, respectively: 2-20%, 3-20%, 4-60%, a number of points is obtained for which a grade is given according to the given criteria - points / grade: <51 - 2; 52-60 - 3, 61-70 - 3+, 71-80 - 4; 81-90 - 4+; > 91 - 5. A student who has not obtained the specified minimum an acceptable number of points from the evaluation of test does not obtain credit for the course.		
Teaching base:	Classrooms, lecture rooms, ambulatory rooms, x-ray room, CT room, MRI room.		

Obligatory and supportive materials[23)]:
Obligatory
1. Coulson A., Lewis N. (2008) An Atlas of Interpretative Radiographic Anatomy of the Dog and Cat, Wiley-Blackwell
2. Thrall D., Robertson I. (2023) Atlas of Normal Radiographic Anatomy and Anatomic Variants in the Dog and Cat, Elsevier
3. Muhlbauer M.C., Kneller S. K. (2013) Radiography of the Dog and Cat: Guide to Making and Interpreting Radiographs,Wiley-Blackwell
Supportive
1. Kealy K.J. et al (2010) Diagnostic Radiology and Ultrasonography of the Dog and Cat, Saunders
2. Wolvekamp P. (2005) Atlas of Radiology of the Traumatized Dog and Cat, Schlütersche
3. Thrall E. (2020) Textbook of Veterinary Diagnostic Radiology, Saunders
4. Waibl H. (2004) Atlas of Radiographic Anatomy of the Cat/Anatomie der Katze (Atlas of Radiographic Anatomy of the Dog and Cat), Perey
5. DuPont G.A., DeBowes L.J. (2008) Atlas of Dental Radiography in Dogs and Cats, Saunders
Indicated by the teacher of scientific publications in the field of discussed content of education and scientific research conducted in the unit

ANNOTATIONS
-

Quantitative summary of the module:

Estimated number of work hours per student (contact and self-study) essential to achieve presumed learning outcomes of the module - base for quantifying ECTS:	**30 h**
Total ECTS points, accumulated by students during contact learning:	**1 ECTS**

Learning outcomes of the module relative to the learning outcomes of the subject:

Outcome category	Learning outcomes:	Learning outcomes relative to the course outcomes	Impact on the each for course outcomes
Knowledge	01 - the student knows the nomenclature of anatomical structures, organs, and their descriptive parts in the radiological image;	A.W1, A.W2, A.W20, A.W3, B.W4	for each 1
Knowledge	02 - the student knows the terms determining body axes, directions, and position of anatomical structures, organs, and their descriptive parts on the radiological image;	A.W1, A.W2, A.W20, A.W3, B.W4	for each 1
Knowledge	03 - the student knows the basic radiological views and their application in clinical practice;	A.W1, A.W2, A.W3, B.W4	for each 1
Knowledge	04 - the student knows the species-specific, morphotypes, and racial differences of anatomical structures, organs, and their descriptive parts in the radiological image;	A.W1, A.W2, A.W3	for each 1

Skills	01 - the student can arrange the radiological image for image evaluation;	A.U14, B.U7	for each 1
Skills	02 - the student can recognize the anatomical structures, organs, and their descriptive parts visible in the radiological image;	A.U14, B.U7	for each 1
Skills	03 - the student can name the anatomical structures, organs, and their descriptive parts visible in the radiological image;	A.U14, B.U7	for each 1
Competences	01 - the student is aware of the interdisciplinary importance of morphological knowledge in the process of animal health assessment;	KS.4, KS.5, KS.9	for each 1
Competences	02 - the student is ready to application of morphological knowledge in professional life;	KS.4, KS.5, KS.9	for each 1
Competences	03 - the student is ready to application of morphological knowledge in the critical analysis of radiological images;	KS.4, KS.5, KS.9	for each 1
Competences	04 - the student is aware of the need for continuing education and is ready to deepen his/her knowledge using scientific sources;	KS.4, KS.5, KS.8, KS.9	for each 1