

Module code	M_WE_SEM9 PW 1G/2G DIAG ONKOL
Field of study	Veterinary medicine
Module name	Diagnostic imaging in clinical oncology Diagnostyka obrazowa w onkologii klinicznej
Language of instruction	English
Module type	elective
Level of studies	Long-cycle Master's Degree studies
Mode of study	Full-time
Year of study in the field of study	VI
Semester of study in the field of study	XI
ECTS credits, divided into contact/non-contact hours	1 (0,64/ 0,36)
Academic title/degree, name of the person responsible for the module	dr. n. vet. Piotr Dębiak
Unit teaching the module	Laboratory of Radiology and Ultrasonography
Module objective	Learning the basic diagnostic methods in diagnosing the most common cancers in small animals. Preparing oncology patients for basic imaging studies. Learning the fundamentals of radiographic and ultrasound data analysis of tumors in the thoracic and abdominal regions. Learning the possibilities of selected diagnostic methods in skeletal cancer. Learning the elementary capabilities of computed tomography in the diagnosis of oncology patients. Own case study.
The learning outcomes for the module include a description of the knowledge, skills and social competences that the student will gain after completing the module.	Knowledge:
	K1. Has knowledge of the use and selection of imaging modality of imaging tests: Ultrasound, X-ray and CT in veterinary clinical oncology.
	K2. Knows the basic radiographic and ultrasonographic signs of thoracic and abdominal organ tumors in small animals
	Skills:
	S1. Is able to detect abdominal organ tumors on ultrasound and evaluate chest and musculoskeletal radiographs in oncology patients; indicates need for further imaging tests including CT to verify process
	S2. Is able to use the main functions of the x-ray and ultrasound apparatus when examining an oncology patient
	Social competences:
	C 1 shows independence in formulating his/her own opinion, is aware of its consequences, especially those affecting health of oncological patients
C2. Is ready for focused further education and self-improvement in imaging diagnostics in small animals with suspected oncologic diseases	
Prerequisites and additional requirements	In accordance to sequence of subjects

Module programme content	Main functions of ultrasound and x-ray apparatuses. Types of presentation helpful especially for cancer patients. Artefacts. Indications and contraindications for specific imaging tests in cases of musculoskeletal, thoracic, and abdominal cancers. Preparing the patient for x-ray, CT and ultrasound depending on the location and severity of the neoplastic process. Use of basic contrast studies in x-ray and CT diagnosis. Principles of image interpretation. Fundamentals of radiographic diagnosis in skeletal oncology of small animals. Diagnosis of cancer metastasis. Clinical case examples of the most commonly found benign and malignant neoplastic diseases in dogs and cats in terms of imaging diagnostic studies. Documentation of the results.
List of core and supplementary literature	<ol style="list-style-type: none"> 1. J. Kevin Kealy Hester McAllister John Graham „Diagnostic Radiology and Ultrasonography of the Dog and Cat”, Saunders 2010. 2. Frances J. Barr , Edited by Lorrie Gaschen “BSAVA Manual of Canine and Feline Ultrasonography”, British Small Animal Veterinary Association 2011. 3. Donald E Thrall „Textbook of Veterinary Diagnostic Radiology”, Elsevier 2017.
Planned forms/activities/teaching methods	Demonstration in the form of presentation, discussion, practical exercises, formulating descriptions of ultrasound and x-ray examinations
Verification methods and ways of documenting the achieved learning outcomes.	<p>During the module there is a discussion held in class during which participants gain knowledge about the algorithms of diagnostic management in the oncology patient. Chest radiographs, ultrasound scans of abdominal organ tumors, and tomograms of the most common tumor processes in small animals are evaluated. The student must be prepared for class in the subject area indicated by the instructor.</p> <p>To verify the learning outcomes, there will be a written assessment consisting of an independent description of diagnostic imaging studies in 3 oncology patients. Descriptions are scored on a scale of 2-5. The instructor evaluates the student's statement based on his/her knowledge and experience. Submissions are graded according to the rule:</p> <ul style="list-style-type: none"> insufficient - 0-50% sufficient - 51-56% sufficient plus - 57-63% good - 64-71% good plus - 72-84% very good - 85-100% <p>C1 - participation in discussion, joint analysis of the situation C 2 - readiness for self-education, self-improvement obligation</p>

ECTS credits	<p>Contact classes:</p> <ul style="list-style-type: none"> - class participation - 15 hours. (0.54 ECTS) - practical course credit - 3 hours. (0.1 ECTS) <p>18 hrs total which is equivalent to 0,64 ECTS credits</p> <p>Non-contact classes:</p> <ul style="list-style-type: none"> - preparation for laboratory classes - 8 hours. (0.3 ECTS) - literature study - 2 hours. (0.06 ECTS) development <p>10 hrs total which is equivalent to 0,36 ECTS credits</p> <p>Total balance: 1 ECTS credit</p>
The workload of activities that require direct participation of an academic teacher	<ul style="list-style-type: none"> - participation in classes (5 hours of tutorials, 10 hours of laboratory classes) - 15 hours. - practical course credit - 3 hours. <p>18 hrs total which is equivalent to 0,64 ECTS credits</p>
Relation of module learning outcomes to major learning outcomes	<p>K1 - B.W4. ++, B.W5. +, B.W6. ++</p> <p>K2 – BU1, BU2+, BU7++</p> <p>S1 i S2 – BU7++</p> <p>C1 – K1+, K2+, K10+</p> <p>C2 – K8++</p>
Elements and values affecting final grade	<p>Final grade:</p> <p>Credit - 100% of weighting</p>