

Module code	M_WE_SEM11 PW 11/2I ELECTRO
Field of study	VETERINARY MEDICINE
Module name	Veterinary electrocardiography Elektrokardiografia weterynaryjna
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 (0.6/0.4)
Academic title/degree, name of the person responsible for the module	Dr. Andrzej Milczak
Unit teaching the module	Department and Clinic of Internal Animal Diseases
Module objective	Familiarization with pathomechanisms of cardiac arrhythmias, dilatation and myocardial hypertrophy. Introduction to the principles of electrocardiographic diagnostics, with the structure and operating principles of electronic electrocardiographic equipment. Gaining the ability to operate electronic ECG equipment in practice. Acquiring the ability to interpret and describe electrocardiograms and Holter recordings.
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. Understands the physical and biological basis of non-invasive cardiac imaging methods and the causes, symptoms, and principles of diagnosing the most common animal heart diseases that can be diagnosed by ECG
	K2. Has an expanded knowledge of cardiac diagnostics and the selection of diagnostic tests to evaluate the patient's condition.
	Skills:
	S1. Is able to operate various types of electrocardiographic equipment, cardiac monitors and Holter monitors.
	S2. Is able to perform, evaluate and interpret electrocardiographic and Holter recordings
	Social competences:
	C1. Is ready for lifelong learning, can inspire and organize the learning process of others.
	C2. Is prepared to solve problems related to the profession.
C3. Is ready to work in a group, taking on a variety of roles within the group.	
Prerequisites and additional requirements	According to the sequence of subjects

Module programme content	<p>Each exercise lasts 1 lesson hour</p> <ol style="list-style-type: none"> 1. Structure and physiology of the heart conduction system. <u>(tutorials)</u> 2. ECG recording technique 3. Physiological sinus rhythms. <u>(tutorials)</u> 4. Electrocardiogram recording in dogs. 5. Electrocardiogram recording in cats. 6. Description of the electrocardiogram. 7. Supraventricular beats and rhythms in practice. 8. Ectopic ventricular beats and ventricular rhythms in practice. 9. Bradyarrhythmias in practice. 10. Electrocardiographic changes secondary to systemic diseases. <u>(tutorials)</u> 11. Holter ECG Testing. <u>(tutorials)</u> 12. Holter ECG recording. 13. Reading and interpretation of Holter recording 14. Invasive Electrophysiology Study (EPS) <u>(tutorials)</u> 15. Receiving credit for the course
List of core and supplementary literature	<p>Core literature:</p> <p>Richard W. Nelson, C. Guillermo Couto: Small Animal Internal Medicine. 5th Edition, 2014</p> <p>Supplementary literature:</p> <p>Ruth Willis, Pedro Oliveira, Antonia Mavropoulou: Guide to Canine and Feline Electrocardiography 1st Edition, Blackwell, 2018</p>
Planned forms/activities/teaching methods	<p>Lecture with multimedia presentation, elements of academic tutoring (case study). Method of didactic games (elements of drama) - applies to tutorials.</p> <p>A model of experiential learning, shaping the skills of practical echocardiographic and Holter examination, documenting and archiving of examination results. Preparing study reports.</p>

<p>Verification methods and ways of documenting the achieved learning outcomes.</p>	<p>K1, K2 - final assessment test. The final test to earn credit includes the exercise material and additional issues made available to students at the beginning of the semester. The test consists of 30 questions. A student may earn between 18 and 30 credit points.</p> <p>S1 - S2 - performance of the practical task assessed on the basis of a written report drawn up after each exercise. Report forms are made available to students at the beginning of each exercise and reviewed no later than 2 weeks prior to the date of end-of-term examinations. Each of the 14 reports is rated on a scale of 0 to 5 credit points. Reports for which the student has received 0 credit points should be corrected within 2 weeks. The average score for all reports submitted is considered for the final grade.</p> <p>C1 - C3 - point assessment of the student's work in a team during exercises. During each exercise, the student's work is subject to evaluation (involvement in the research, diligence, cooperation with other group members). A student may earn between 0 and 2 credit points.</p> <p>The final grade is based on the sum of the points earned from the final credit, report evaluation, and student work evaluation: 20 - 22 points. - sufficient; 23 - 27 pts. - sufficient+; 28 - 33 points. - good; 34 - 35 points. good+; >35 points. – very good.</p>																													
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<p>Relation of module learning outcomes to major learning outcomes</p>	<p>K1. - WE_W15+++ , WE_W16+++ , WE_W18; +++ K2. - WE_W21 +++ S1. - WE_U20; ++ S2. - WE_U3 ++ C1. - WE-K5, WE-K6, WE-K11; + C2. - WE-K4; + C3. - WE-K5+, WE-K9+, WE-K11+</p>																													
<p>Elements and values affecting final grade</p>	<ul style="list-style-type: none"> • Final test score - 48 - 81% • Performance of the practical task - 0 - 13.5% • Point evaluation of the student's teamwork during exercise performance - 0 - 5.5% <p style="text-align: center;">The minimum score must not be less than 54%.</p>																													