Module title:	Clinical and laboratory diagnostic	ECTS	3
Polish translation:	Diagnostyka kliniczna i laboratoryjna		
Course:	**Veterinary Medicine**		

Module language: English			Stage: JM-FVM		
Form of studies: ■ intramural ☐ extramural	Type of module: ■ basic ☐ directional	■ mandatory ☐ elective	Semester: V.		■ winter semester ☐ summer semester
		Academic year:	**2023/2024**	Catalogue number:	**FVM-V-JMSS-W5_-D28_23**

Module coordinator:	**Dr n. wet. Karol Pawłowski**
Teachers responsible for the module:	**Academic teachers of the Institute of Veterinary Medicine; Department of Pathology and Veterinary Diagnostics; PhD students in accordance to the internal legal acts; visiting professors; other specialists in the field of study**
Objectives of the module:	The student learns the methods of detailed clinical examination, including species differences, to apply these methods in the diagnosis of diseases in individual animals and in the herd. LECTURE TOPICS: 1. Basic concepts used in diagnostics and detailed clinical and laboratory management in the study of the digestive system [6 hours] 2. Basic concepts used in diagnostics and detailed clinical and laboratory management during examination of the urination system. [6 hours] 3. Basic concepts used in diagnostics and detailed clinical and laboratory procedures in the study of the nervous system [6 hours] 4. Basic concepts used in diagnostics and detailed clinical and laboratory management in diagnostics of endocrine-related diseases [6 hours] 5. Basic concepts used in diagnostics and detailed clinical and laboratory management in the diagnosis of metabolic diseases [4 hours] 6. Basic concepts used in diagnostics and detailed clinical and laboratory management during reproductive system examination [2 hours] CLASSES: 1. Detailed examination of the digestive system and indicates additional tests that can be performed in the diagnosis of this system [12 hours] 2. Detailed examination of the urinary and nervous system and indicates additional tests that can be performed in the diagnosis of these systems [12 hours] 3. Exercises in the veterinary diagnostic laboratory - the student becomes familiar with the practical assessment of the biological material sent to the laboratory (on the example of blood and urine), prepares it for the determination of basic haematological and biochemical parameters, as well as reads the results obtained and compares them with reference values [6h] The content of lecture education is a supplement to the content of exercise education.
Teaching forms, number of hours:	a) Lectures; hours 30; b) Laboratory classes; hours 4; c) Seminars; hours …; d) Clinical laboratories; hours 10; e) Field exercises; hours 16;
Teaching methods:	• Original multimedia presentations prepared by academic teachers. • Methods enabling students to acquire practical skills: • examination of animals under supervision of the academic teacher • completing the medical history card • microscopic exercises • Consultations (1h/week). Detailed schedule will be defined by the coordinator of the course at the beginning of semester. Detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.
Formal prerequisites and initial requirements:	Passing the courses: Topographic anatomy, Animal physiology.

Learning effects		Course outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	Student knows basic nomenclature used in clinical and laboratory diagnostics	A.W.20, B.W.4, B.W.5	3
	2	Student knows the relationship between the clinical examination methods of organ systems and proper choice of laboratory tests.	A.W.2, A.W.4, A.W.12, B.W.4, B.W.5, B.W.6 A.W.5	3 2
	3	Student knows the basic principles of work in the analytical laboratory keeping in mind proper ethical values.	A.W.22, B.W.6	3
Skills:	1	Student can fill out the patient „clinical chart" specific for each species with information gathered from the interview and the clinical examination	A.U.14	3
	2	Student can perform the whole clinical examination, including the medical interview, general and detailed physical examination with special attention to standards of ethics	A.U.6, B.U.1, B.U.2, B.U.3, B.U.5 A.U.2	3 2
	3	Student can use the indices of production, laboratory parameters and wellness parameters for the assessment of herd health status and diagnosis of subclinical disease states	A.U.7	3
Competences:	1	Student is prepared to assess biological laboratory samples (blood, urine) useful for laboratory tests	K.S.5, K.S.8	3
	2	Student is prepared to read and identify results of laboratory tests with respect to reference values.	K.S.5, K.S.8	3

Objectives of the module required to obtain learning effects:	Student learns the basic methods of general clinical examination, including species differences, to apply these methods in the diagnosis of diseases in individual animals and in the herd. Student learns to collect biological material for laboratory tests along with the principles of its storage and transport to the laboratory to confirm the initial diagnosis. Student learns to collect information from an anamnesis and a clinical exam as well as the results of laboratory tests and record correct medical history
Assessment methods:	Evaluation of practical skills, written test In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.
Detail description of assessment methods; Formal documentation of learning outcome:	The student is obliged to: 1. Perform the diagnostic activities under the supervision of the academic teacher. Properly done activities are registered in First Day Skills Diary. 2. Completing the written exam at the end of the semester - 30 questions (single-choice test) with the possibility of improvement in the second term (if the minimum number of points is not obtained). 1 point is awarded for every correct answer, 21 points are required to pass. Both terms have the same form. 3. Completing practical exam at the end of the semester – oral form, 10 questions, randomly selected from the list, 2 point is awarded for every correct answer, 14 points are required to pass. Both terms have the same form. No extra assessment methods are anticipated. In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted. eHMS entry. Records collected in the course portfolio i.e. individual records of student results, presence lists, database of oral and written questions, written assessments of the students.
Elements impelling final grade:	Attendance to the classes is mandatory, student can be absent on 20% of labs or according to the current academic regulations. **The final grade entered in the eHMS is issued on the basis of the exam: (60% theoretical exam - 30 points and 40% practical exam - 20 points), thus, 50 is possible and graded according to the following scale:** **0-34 points niedostateczny (not pass 2,0), 35-37 points dostateczny (3,0), 38-39 points dostateczny plus (3,5), 40-42 points dobry (4,0), 43-45 points dobry plus (4,5), 46-50 points bardzo dobry (5,0)**
Teaching base:	Small Animal Clinic, Equine Clinic, Veterinary Diagnostics Laboratory of the Institute of Veterinary Medicine, Cattle Farm at Obory

Mandatory and supportive materials :

1. Diagnostic techniques in equine medicine: a textbook for students and practitioners describing diagnostic techniques applicable to the adult horse. Ed. by F.G.R. Taylor, T. J. Brazil, M.H. Hillyer. Saunders/Elsevier, 2010.
2. Blackwell's five-minute veterinary consult: laboratory tests and diagnostic procedures: canine & feline. S. L. Vaden et al., Wiley-Blackwell 2009.

3. Diagnostic cytology and hematology of the dog and cat 3rd ed.. R.L. Cowell et al. Mosby 2008. 4. Ruminant diagnostic medicine. R.J. Allan. WB Saunders 2007. 5. Veterinary Clinical Examination and Diagnosis. WS Saunders 2000. Relevant scientific publications, including those of the module coordinator.
ANNOTATIONS

* 3 – complete and detailed, 2 – moderate, 1 – basic.

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:	**70 h**
Total ECTS points, accumulated by students during contact learning:	**3 ECTS**