Module title:	Pathomorphology Module 2	ECTS	8
Polish translation:	Patomorfologia		
Course:	**Veterinary Medicine**		

Module language: English		Stage: JM-FVM		
Form of studies: ■ intramural ☐ extramural	Type of module: ☐ basic x directional	x mandatory ☐ elective	Semester: 6	☐ winter semester x summer semester
	Academic year:	**Intake 2022/2023**	Catalogue number:	FVM-V -JMSS-05Z/06L/07Z-D57_22

Module coordinator:	**Prof. dr hab. Rafał Sapierzyński**
Teachers responsible for the module:	**Academic teachers of the Institute Veterinary Medicine; Department of Animal Pathology and Veterinary Diagnostics, Division of Pathology**
Objectives of the module:	Aim of the course is: • to gain knowledge in field of pathomorphology of domestic animals • to learn methods of performing an autopsy in various domestic animals • to know indications and methods of collection of samples for cytopathological and histopathological examination • to achieve ability to correctly interpret the results of histopathological and cytopathological examination to learn how to prepare cytopathological smears and to diagnose basic pathological changes during microscopic examination
Teaching forms, number of hours:	a) Lectures – 30 hours b) Labs – autopsy room – 18 hours c) Histopathology – 15 hours d) Tests and exams – 12 hours Depending on external conditions that make it impossible to conduct classes in a planned form, it is allowed to change the didactic forms.
Teaching methods:	Lectures, seminars, practicals in the laboratory of histopathology and necropsy room. Students learn theoretical information about following subjects: • Pathology of gastrointestinal tract. Oral cavity • Pathology of gastrointestinal tract. Stomach. oesophagus • Pathology of gastrointestinal tract. Small intestine, large intestine • Pathology of liver and pancreas. • Pathology of respiratory system. Upper respiratory tract • Pathology of respiratory system. Lung • Pathology of heart. Responses to injury, alteration in muscle size, noninflammatory and • inflammatory diseases of myocardium. Disorders of endocardium. Heart neoplasia. • Pathology of serosal membranes and cavities. Serosal effusion - causes, types, cytological • examination • Diseases of immune system. Hypersensitivity, autoimmune diseases, immunologic deficiencies • Pathology of immune system. Thymus and spleen. Structure and function, responses to injury. • Congenital disorders, regressive lesions, hyperplastic lesions, inflammation, neoplasia. • Pathology of immune system. Lymph nodes - structure and function, responses to injury. • Congenital disorders, regressive lesions, hyperplastic lesions, inflammation, neoplasia: lymphomas • and metastatic neoplasms. • Pathology of bone marrow. Structure and function, responses to injury. Inflammation, leukemoid • reaction, primary neoplasia - leukemias. • Pathology of plasma cells, histiocytes and mast cells. Non-malignant and malignant proliferation. • Pathology of urinary system. Kidney - types of kidney's injury, types of kidneys diseases • Pathology of urinary system. Disease of lower urinary tract. During practicals students learn about indications, techniques and methods of necropsy of domestic animals cadaver, they perform autopsy of various animal species: dogs, cats, ruminants, pigs and horses. Students learn how to do necropsy protocol, how to chose and collect samples to histopathological examination, how to send it to laboratory. During histopathology labs students learn about microscopic picture of various pathological lesions. Depending on external 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:	Anatomy, clinical anatomy, histology, physiology, physiopathology, immunology, microbiology, veterinary pharmacology 1 pathomorphology 1 Student should have a theoretical and practical knowledge about subjects mentioned above Student is capable to work with light microscope

Learning effects		Course outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	The student has theoretical knowledge in the field of general pathology of animals, specific pathology of animals and clinical pathology	W_NK1, W_NK2	3
	2	Student knows and interprets pathophysiological changes in organs and systems, as well as biological (including immunological) and pharmacological mechanisms enabling recovery.	W_NK3	3
	3	Speaks Polish and Latin medical nomenclature	W_NK7	3
	4			
Skills:	1	Student can perform autopsies of animals	U_OUZ3	3
	2	Student can collect tissue material for histopathological examinations (excisions of internal organs, pathological tissues removed during procedures, tissue bioptates) properly secure and properly send to the histopathological laboratory.	U_PUZ6, U_PUZ15	3
	3			
Competences:	1	Can use practically acquired knowledge and acquired skills.	INNE 1	3
	2			
	3			

Objectives of the module required to obtain learning effects:	Aim of the course is: • to gain knowledge in field of pathomorphology of domestic animals • to learn methods of performing an autopsy in various domestic animals • to know indications and methods of collection of samples for cytopathological and histopathological examination • to achieve ability to correctly interpret the results of histopathological and cytopathological examination to learn how to prepare cytopathological smears and to diagnose basic pathological changes during microscopic examination
Assessment methods:	**Written colloquium** based on knowledge achieved during module 1 and recognition of histopathological slides (using light microscopy student has to recognise at least 2 of 3 microscopic slides and then has to answer question on general pathomorphology) – to pass this test student has to know at least 70% of obligatory material. **Practical/oral test** – student knows necropsy procedures, safety rules in necropsy room, student has to perform necropsy of animal according to necropsy procedures and is capable to recognise pathologic changes present in the examined cadaver (to pass this test student has to know at least 70% of obligatory material). No extra assessment methods are anticipated. 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:	**Written colloquium** based on knowledge achieved during module 1 and recognition of histopathological slides (using light microscopy student has to recognise at least 2 of 3 microscopic slides and then has to answer question on general pathomorphology) – to pass this test student has to know at least 70% of obligatory material. **Practical/oral test** – student knows necropsy procedures, safety rules in necropsy room, student has to perform necropsy of animal according to necropsy procedures and is capable to recognise pathologic changes present in the examined cadaver (to pass this test student has to know at least 70% No extra assessment methods are anticipated. 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:	Average of positive grades from general pathology/histopathology colloquium and necropsy techniques test.
Teaching base:	Teaching facilities of the Division of Pathomorphology, Department of Pathology and Diagnostics, Institute of Veterinary Medicine

Mandatory and supportive materials :

1. Lectures: general pathology 30 h.
2. Lectures: special pathology 60 h.
3. Necropsy for Veterinary Students. K. Kliczkowska-Klarowicz. SGGW, Warsaw 2017
4. Handouts – histopathology (given by lecturer)
5. Pathologic basis of veterinary disease. M. D. McGavin and J. F. Zachary. Mosby-Elsevier Ed.
6. Introduction to veterinary pathology. N. F. Cheville, Blackwell Publishing
7. 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:	**75 h**
Total ECTS points, accumulated by students during contact learning:	**8 ECTS**