

Module title:	Clinical toxicology of large animals	ECTS	1
Polish translation:	Kliniczna toksykologia dużych zwierząt		
Course:	Veterinary Medicine		

Module language: English		Stage: JM-FVM	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☐ basic ☒ directional	☐ mandatory ☒ elective	Semester: 9 ☒ winter semester ☐ summer semester
Academic year:		Intake 2022/2023	Catalogue number:

Module coordinator:		Dr hab. Marta Mendel, prof. SGGW		
Teachers responsible for the module:		Academic teachers of the Faculty of Veterinary Medicine; Department of Preclinical Sciences. PhD students in accordance to the internal legal acts; visiting professors; other specialists in the field of study		
Course Description:		During the course, the student acquires detailed information on the most common poisonings noticed in large animals (horses, cattle, small ruminants, pigs), including prevention, diagnostics, and treatment. Lecture content; Introduction to clinical toxicology of large animals (horses, cattle, pigs and small ruminants); Epidemiology of the most frequent poisonings in large animals (1 hour); Detailed characteristic of iron toxicity, including adverse reactions in piglets (1 hour); Detailed characteristic of metals (copper, sulphur, chronic selenium and fluoride) poisonings (2 hours); Detailed characteristics of animal and bacteria toxins (2 hours); Detailed characteristics of toxic plants (poisonings in grazing animals and intoxications caused by contaminated feed (3 hours); Toxicological significance of non-protein nitrogen (NPN) compounds in animal diet; Feed contamination with mycotoxins (2 hours); Salt poisoning (water deprivation), including film watching; The signification of water quality in animal production (2 hours); Introduction to anti-doping and controlled medication regulations in equine sport. Basics of herbal-drug interactions (2 hours).		
Teaching forms, number of hours:		a) Lectures; hours: 15 b) Laboratory classes; hours ...; c) Seminars; hours ...; d) Clinical laboratories; hours ...; e) Field exercises; hours ...;		
Teaching methods:		• Original multimedia presentations prepared by academic teachers that link theoretical knowledge with practical aspects of the veterinary profession • Discussions initiated by the teachers • Videos presenting clinical symptoms of poisonings in cats and dogs • Consultations (7 h in semester) A detailed schedule will be defined by the coordinator of the course at the beginning of the semester. Detailed organization of consultations will be defined by the coordinator of the course at the beginning of the semester.		
Formal prerequisites and initial requirements:		Passing the courses: Toxicology		
Learning effects		Course outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	A graduate knows the most common poisonings reported in large animals, including their causes and manifestations,	A.W.21, A.U.17 B.W.1, B.W.2, B.W.3	3 1
	2	A graduate knows and understands the diagnostic rules and non-specific and specific therapy protocols used in acute and chronic poisonings,	A.W.21 A.W.16, B.W.4	3 2
	3	A graduate knows the consequences of incorrect dosing of mineral and phytogetic feed additives in farm animals and horses,	A.W.16	2
Skills:	1	A graduate is able to collect toxicological data, including data specific to individual animal species,	A.U.12, A.U.13 B.U.2	1 2
	2	A graduate is able to select samples and diagnostic tests to confirm a poisoning,	B.U.6, B.U.23	2
	3	A graduate can choose the most suitable therapy protocol in acute and chronic poisonings,	B.U.13	2

	4	A graduate is able to perform a differential diagnostic process in case of poisoning suspicion,	B.U.6	1	
Competences:	1	A graduate is prepared to make a decision in a situation of chemical hazard (decide about therapy protocols for affected animals and personal protective equipment for individuals involved),	K.S.1, K.S.5, K.S.10	2	
	2	A graduate is prepared to advise animal owners/farmers regarding the safe use of mineral and phytogetic feed additives,	K.S.9	1	
	3	A graduate is ready to critically interpret the results of laboratory tests in the case of toxicological analysis.	K.S.7	1	
Objectives of the module required to obtain learning effects:		During the course, a student acquires detailed knowledge of clinical toxicology in large animals, including the prevention, diagnosis, and treatment of poisoning in horses, cows, pigs, and small ruminants. Special attention is being paid to differential diagnostics within toxicology and beyond. The course also introduces the theme of doping in animal athletes.			
Assessment methods:		All lectures are obligatory. Those with attendance of 5 or more lectures will benefit from the final test. One verification (written) test at the end of semester – 3 questions for frequent attenders of the lectures or 4 questions for all other students. To pass the test, one must obtain at least 51% of the total points (at least 8 out of 15 points, or 10.5 out of 20 points in the case of 3 and 4 questions, respectively). Grading scale:			
		3-question test		4-question test	
		Number of points:		Grade	
		0 – 7.5		2 (insufficient)	
		8.0 – 9.0		3 (sufficient)	
		9.5 – 10.5		3.5 (sufficient +)	
		11.0 – 12.0		4.0 (good)	
		12.5 – 13.5		4.5 (good +)	
		14.0 – 15.0		5.0 Very good)	
				A failed test can be repeated once. No extra assessment methods are anticipated.	
		In case of unforeseen or unusual circumstances, mandatory remote teaching and assessment methods might be adopted.			
Detail description of assessment methods;		No extra assessment methods are anticipated.			
Formal documentation of learning outcome:		eHMS entry. Records collected in the course portfolio, i.e., individual records of student results, presence lists, database of oral and written questions, and written assessments of the students.			
Elements impelling final grade:		Final grade is equal to the grade of the final test			
Teaching base:		Lecture facilities of the Faculty of Veterinary Medicine			
Mandatory and supportive materials : 1. Clinical Veterinary Toxicology, ed. KH Plumlee,. Mosby, 2004 2. Veterinary Toxicology, ed. RC Gupta, Elsevier, 2018 3. FEI Regulations https://inside.fei.org/fei/cleansport https://pzj.pl/sport/antydoping/ 4. Blackwell's Five-Minute Veterinary Consult Clinical Companion: Equine Toxicology, ed. Lynn R. Hovda, Dionne Benson, Robert H. Poppenga, Wiley, 2021 5. Medical Toxicology of Natural Substances: Foods, Fungi, Medicinal Herbs, Plants, and Venomous Animals, ed. Donald G. Barceloux, Wiley, 2008 6. Drug-Drug Interactions for Therapeutic Biologics, ed. Honghui Zhou, Bernd Meibohm, Wiley, 2013 7. Toxic Plants of North America, 2nd Edition, ed. George E. Burrows, Ronald J. Tyrl, Wiley, 2012 8. Blackwell's Five-Minute Veterinary Consult: Ruminant, 2nd Edition, ed. Christopher Chase, Kaitlyn Lutz, Erica McKenzie, Ahmed Tibary, Wiley, 2017 9. Blackwell's Five-Minute Veterinary Consult: Equine, 3rd Edition, ed. Jean-Pierre Lavoie, Wiley, 2019 10. Toxicology for the Equine Practitioner, Ahmad Al-Diss, Vet Clin North Am Equine Pract, 2015 Aug;31(2):269-79. doi: 10.1016/j.cveq.2015.04.009					
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:	30 h
Total ECTS points, accumulated by students during contact learning:	1 ECTS