

Module title:	Clinical toxicology of large animals	ECTS	1
Polish translation:	Toksykologia kliniczna 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: 2021/2022		Catalogue number:	FVM-V-JMSS-09W-ED01_21

Module coordinator:	dr hab. Marta Mendel, prof. SGGW			
Teachers responsible for the module:	Academic teachers of the Institute 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			
Objectives of the module:	During the course student acquires detailed information on 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			
Teaching methods:	• Original multimedia presentations prepared by academic teachers which link theoretical knowledge with practical aspects of veterinary profession • Discussions initiated by the teachers • Videos presenting clinical symptoms of poisonings • Consultations (7 h in semester) 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: Toxicology			
Learning effects	Course outcomes:		Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	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	knows and understands the diagnostics 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
		knows the consequences of incorrect dosing of mineral and phytogenic feed additives in farm animals and horses,	A.W.16	2
		is able to collect toxicological data, including data specific for individual animal species,	A.U.12, A.U.13 B.U.2	1 2
Skills:	1	is able to select samples and diagnostic tests to confirm a poisoning,	B.U.6, B.U.23	2
	2	can chose the most suitable therapy protocol in acute and chronic poisonings	B.U.13	2
		is able to perform differential diagnostic process in case of poisoning suspicion	B.U.6	1

		is able to collect toxicological data, including data specific for individual animal species,	A.U.12, A.U.13 B.U.2	1 2	
Competences:	1	is prepared to make its mind 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	is prepared to advise animal owner/farmer in regards to safe use of mineral and phytogetic feed additives	K.S.9	1	
	3	is ready to critically interpret the results of laboratory tests in case toxicological analysis	K.S.7	1	
Objectives of the module required to obtain learning effects:		During the course student acquires detailed information on most common poisonings noticed in large animals (horses, cattle, small ruminants, pigs), including prevention, diagnostics and treatment.			
Assessment methods:		All lectures are obligatory. The attendance at 5 lectures or more will be benefited at 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 total number of points (at least 8 out of 15 points or 10.5 out of 20 points in case of 3 and 4 questions, respectively). In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.			
Detail description of assessment methods;		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)	
Formal documentation of learning outcome:		Failed test can be repeated once. 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:		Final grade is equal with the grade of the final test.			
Teaching base:		Lecture facilities of the Institute 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