

## Syllabus

Module title:	Veterinary pharmacology - Module 1	ECTS	4
Polish translation:	Farmakologia weterynaryjna - Moduł 1		
Course:	Veterinary Medicine		

Module language:	English	Stage:	1
Form of studies:	<input checked="" type="checkbox"/> intramural <input type="checkbox"/> extramural	Type of module:	<input checked="" type="checkbox"/> basic <input type="checkbox"/> directional
		<input checked="" type="checkbox"/> mandatory <input type="checkbox"/> elective	Semester: 5
			<input checked="" type="checkbox"/> winter semester <input type="checkbox"/> summer semester
Academic year:	2022/2023	Catalogue number:	FVM-JMSS-05W-B37-22

Module coordinator:	dr n. wet. Wojciech Karlik			
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:	Familiarization with general pharmacology (mechanisms of action of drugs at the molecular, cellular, organ and whole organism levels, pharmacokinetics, drug interactions) and detailed pharmacology of organ-acting drugs (characteristics of selected veterinary drugs representing individual anatomical, therapeutic and chemical classification groups - ACTVet). Understanding with the classification of active substances used in the treatment of animals. Knowledge of the basics of veterinary pharmacotherapy (indications, contraindications, side effects and interactions of drugs, in different species of animals).			
Teaching forms, number of hours:	Lectures: 30 hours Seminars: 30 hours			
Teaching methods:	Lecture - multimedia presentation prepared by academic teachers Seminars - Students' own work (independent or in groups) on solving the problem given by the teacher; presentations prepared by students in the form of a short lecture; discussion. Consultation - 1 hour / week. Detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.			
Formal prerequisites and initial requirements:	Subjects with which the student must have a positive assessment: animal physiology, pathophysiology, chemistry, biochemistry, biophysics, animal anatomy, histology and embryology, microbiology, parasitology and invasion			
Outcome category	Learning outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes	
Knowledge	W1	Student knows definitions and concepts in the field of general pharmacology, pharmacokinetics and experimental pharmacology	A.W.16	3
	W2	Student knows the detailed pharmacology of organ drugs in relation to about 150 active substances including: pharmacodynamics, pharmacokinetics, side effects and contraindications in the main species of domestic animals	A.W.16	3
	W3	Student can classify about 300 active substances together with their assignment to the appropriate ACTVet group (including 3 level of classification);	A.W.16	3
	W4	Student understands drug interactions and polytherapy	A.W.16	3
	W5	Student knows in the basic level pharmaceutical law, including in the field of writing medicines on the prescription	A.W.19, B.W.7	3
	W6	Student understand the issues of drug impact on the environment and the problem of drug residues in products of animal origin	A.W.16, B.W.21	3
Skills	U1	Student is able to use the drug to achieve the desired changes in the healthy body	A.U.4, B.U.13	3
	U2	Student is able to choose the right drug to modify the body's functions in a given pathological condition	A.U.4, B.U.13	3
	U3	Student can write the medicinal product on the prescription	B.U.10	3
	U4	Student is able to calculate a withdraw period for the drug	B.U.10	3
	U5	Student is able to communicate knowledge in the field of drug action and justify the choice of drug for treatment	A.U.12, A.U.13	3
Competences	K1	Student uses medicines in a responsible manner	KS.1	3
	K2	In the selection of the drug student is primarily guided by the well-being of the patient	KS.2, KS.4	3

	K3	Student finds information about new drugs,	KS.4, KS.8	1																				
	K4	Student is involved in the progress of new drugs pharmacology, assesses the differences between drugs based on their own observations	KS.5	1																				
	K5	Student deepens the knowledge necessary for further education	KS.4, KS.8	1																				
Objectives of the module required to obtain learning effects:	<p>Topics of lectures:</p> <p>Pharmacodynamics general principles and definition. [2 hours]  Pharmacokinetics. [2 hours]  Drug acting on musculo-skeletal system. QM03 Muscle relaxants. [2 hours]  Drug acting on central nervous system. QN01B Anesthetics, local. [2 hours]  QN01A Anesthetics, general. [2 hours]  QN02 Analgesics. [2 hours]  QM01 Anti-inflammatory and antirheumatic products (NSAID). [2 hours]  QH02 Corticosteroids for systemic use. [2 hours]  QA alimentary tract and metabolism. QA02 Drugs for acid related disorders. [2 hours]  QA05 Bile and liver therapy. QA08 Antiobesity preparations. QA15 Appetite stimulants. [2 hours]  Drugs effect on GIT in ruminants. QC10 Lipid modifying agents. [2 hours]  Drug acting on cardiovascular system. QC01A Cardiac glycosides. [2 hours]  QC01C Cardiac stimulants excl. cardiac glycosides. QC01D Vasodilators used in cardiac disease. [2 hours]  QC03 Diuretics. Fluid electrolyte therapy. [2 hours]  QR Respiratory system. QB Blood and blood forming organs. [2 hours]</p> <p>Topics of seminars:</p> <p>Organization of pharmacology laboratories. Basic concepts of drugs and medications. Legal provisions (Pharmaceutical Law Act). ATCvet. classification. [2 hours.]  Veterinary prescription. Rules for writing drugs on a prescription. [2 hours.]  Pharmacology of autonomic nervous system – adrenergic. [2 hours]  Pharmacology of autonomic nervous system – cholinergic. [2 hours]  QN05 Psycholeptics part 1: QN05A Antipsychotics, QN05B Anxiolytics  QN05 Psycholeptics part 2: QN05C Hypnotics and sedatives, Alpha-2 agonist centrally acting [2 hours]  QN03 Antiepileptics. QN06 Psychoanaleptics, QN51 Products for animal euthanasia [2 hours]  Drug acting on gastrointestinal tract. QA03 Drugs for functional gastrointestinal disorders. QA06 Laxatives, QA07 Antidiarrheals [2 hours]  QA04 Antiemetics and antinauseants [2 hours]  Drug acting on cardiovascular system. QC02 Antihypertensives. QC04 Peripheral vasodilators, QC05 Vasoprotectives [2 hours]  QC07 Beta blocking agents, QC08 Calcium channel blockers, QC09 Agents acting on the renin-angiotensin system [2 hours]  QC01B Antiarrhythmics. Recapitulation group QC [2 hours]  QH Systemic hormonal preparations [2 hours]</p>																							
Assessment methods:	Written colloquium, written short test conducted at the beginning of the seminars, assessment presentation prepared by the student.																							
Detail description of assessment methods	<p>1 / Written colloquium with open descriptive questions and test questions (multiple choice test). The number of questions, the proportions between the type of questions and the scores for individual questions may vary depending on the difficulty of the questions. The sum of points obtained at the colloquium is expressed as a relative percentage scale, where 100% is the maximum of points that can be obtained at the colloquium. The scope of knowledge checked at colloquia includes lecture and seminars topics. There is no minimum of points necessary to pass the colloquium.</p> <p>Two colloquia (K1 and K2) are planned. Student can get 100 percentage points from each colloquium. Each colloquium has two terms. Each student has the right to write colloquium two times, regardless of the result obtained. The result obtained from the next term cancels the result from previous term of the given test. An absence on the first term gives the right to re-schedule this term. Absence on the second term does not result in setting another term.</p> <p>The percentage points from each colloquium are converted into grades according to the following scale:</p> <table border="1"> <thead> <tr> <th>Percentage points</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>0-30</td> <td>0,0</td> </tr> <tr> <td>31-39</td> <td>1,0</td> </tr> <tr> <td>40-44</td> <td>1,5</td> </tr> <tr> <td>45-49</td> <td>2,0</td> </tr> <tr> <td>50-60</td> <td>3,0</td> </tr> <tr> <td>61-70</td> <td>3,5</td> </tr> <tr> <td>71-80</td> <td>4,0</td> </tr> <tr> <td>81-90</td> <td>4,5</td> </tr> <tr> <td>91-100</td> <td>5,0</td> </tr> </tbody> </table>				Percentage points	Grade	0-30	0,0	31-39	1,0	40-44	1,5	45-49	2,0	50-60	3,0	61-70	3,5	71-80	4,0	81-90	4,5	91-100	5,0
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	<p>2 / Assessment of work on seminars in module 1 consists of: (a) assessment of presentations prepared by the student as part of their own work on a topic assigned by the teacher and (b) assessment of preparation for seminars.</p> <p>(a) The assessment of presentations prepared by the student as part of their own work is given on a scale of 0 to 5. The assessment is given based on compliance with the topic and correct answers to the questions asked.</p> <p>(b) The assessment of preparation for seminars consists of the following events: assessment of the discussion during seminars, assessment of solving a problem assigned by the teacher during seminars, assessment of written tests conducted at the beginning of the seminars. Only one grade can be given for each seminars and it is a grade on a scale of 0 to 5. If several assessed events occurred during a given class, then at the end of the class the average of the assessments is calculated.</p> <p>The final grade for the work on seminars in module 1 (C1) is calculated at the end of the semester and is the average of the grades awarded during the semester, with the grade for presentations being counted three times..</p> <p>No extra assessment methods are anticipated.</p> <p>In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.</p>														
Formal documentation of learning outcomes:	<p>eHMS entry.</p> <p>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.</p>														
Elements impelling final grade:	<p>The final grade, entered into eHMS, is calculated from the formula:  <math>[K1 * 0.45] + [K2 * 0.45] + [(C1-2) * 0.2]</math>          where: K1 - grade from colloquium 1, K2 - grade from colloquium 2, C1 - assessment of the work on seminars          The value calculated above is converted into a final grade according to the table below:</p> <table border="1"> <thead> <tr> <th>Calculated value</th> <th>Final grade</th> </tr> </thead> <tbody> <tr> <td>&lt;0,00 - 3,00)</td> <td>2,0</td> </tr> <tr> <td>&lt;2,90 – 3,25&gt;</td> <td>3,0</td> </tr> <tr> <td>(3,25 – 3,75&gt;</td> <td>3,5</td> </tr> <tr> <td>(3,75 – 4,25&gt;</td> <td>4,0</td> </tr> <tr> <td>(4,25 – 4,75&gt;</td> <td>4,5</td> </tr> <tr> <td>(4,75 – 5,10&gt;</td> <td>5,0</td> </tr> </tbody> </table> <p>If the student is absent from more than 3 seminars the grade on the end of module 1 is 2.0.</p>	Calculated value	Final grade	<0,00 - 3,00)	2,0	<2,90 – 3,25>	3,0	(3,25 – 3,75>	3,5	(3,75 – 4,25>	4,0	(4,25 – 4,75>	4,5	(4,75 – 5,10>	5,0
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Teaching base:	Lecture halls, seminar rooms at SGGW														
Mandatory and supportive materials :	<p>(1) Veterinary Pharmacology and Therapeutics. Red. H. Richard Adams, Iowa State University.</p> <p>(2) Handbook of veterinary pharmacology. Red Walter H. Hsu. Wiley-Blackwell 2008 r.</p> <p>(3) Relevant scientific publications, including those of the module coordinator.</p>														
ANNOTATIONS															

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:	100 h
Total ECTS points, accumulated by students during contact learning:	4 ECTS