Syllabus

Module title:	Veterinary pharmacology - Module 2	ECTS	4
Polish translation:	Farmakologia weterynaryjna - Moduł 2		
Course:	Veterinary Medicine		

Module language:	English			Stage:	1	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☒ basic ☐ directional	☒ mandatory ☐ elective		Semester: 6	☐ winter semester ☒ summer semester	
Academic year:				Itanke 2022/2023	Catalogue number:	FVM-V-JMSS-06S-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:		Acquaintance with chemotherapeutics used in animal treatment and principles of chemotherapy. Acquaintance with the detailed pharmacology of all groups of chemotherapeutics (antibacterial, antiviral, antiparasitic, anticancer) including. mechanisms of drug action, resistance mechanisms, pharmacokinetics, interactions, indications and contraindications, side effects, issues of drug residues in tissues. The content of the lectures supplements the content of the laboratory seminars.		
Teaching forms, number of hours:		Lectures: 15 hours; Seminars: hours 45 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, Veterinary pharmacology 1, Pathomorphology 1		
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 chemotherapy	A.W.16	3
	W2	Student knows the detailed pharmacology for about 200 chemotherapeutic substances including: pharmacodynamics, pharmacokinetics, side effects and contraindications in the main species of domestic animals;	A.W.16	3
	W3	Student can classify about 400 active substances from the group of chemotherapeutics along with their classification to the appropriate ACTVet group (including 3 level of classification)	A.W.16	3
	W4	Student knows the rules for writing chemotherapeutics on a prescription	A.W.19	3
	W5	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
	W6	Student can select the appropriate chemotherapeutic for the defined infectious organism along with determining the dose and route of administration	A.U.4, B.U.13	3
	W7	Student understands drug interactions and its role in polytherapy	A.U.4, B.U.13	3
Skills	U1	Student can write a medicinal product on the prescription	B.U.10	3
	U2	Student is able to calculate a withdraw period for the drug	B.U.10	3
	U3	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 drugs in 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 chemotherapeutics,	KS.4, KS.8	1

<table>
<tr><td></td><td>K4</td><td>Student is involved in the progress of new chemotherapeutics pharmacology, assesses the differences between drugs based on their own observations</td><td>KS.5</td><td>1</td></tr>
<tr><td></td><td>K5</td><td>Student deepens the knowledge necessary for further education</td><td>KS.4, KS.8</td><td>1</td></tr>
<tr><td colspan="2">Learning content ensuring the achievement of learning outcomes:</td><td colspan="3">Topics of lectures:
Principles of antibacterial chemotherapy. Principles of antiparasitic chemotherapy. [3 hours]; Drugs used against protozoa [2 hours]; Drugs used against tapeworms and flukes [2 hours]; Drugs used against nematodes [4 hours]; Drugs used against external parasites [2 hours]; Principles of cancer chemotherapy. Anticancer chemotherapeutics. [2 hours.].
Topics of seminars:
Disinfectants and antiseptics [3 hours]; Penicillins. Beta-lactamase inhibitors [3 hours]; Cephalosporins, carbapenems, monobactams [3 hours]; Aminoglycoside antibiotics [3 hours]; Peptide-type antibiotics [3 hours]; Quinolones and fluoroquinolones [3 hours]; Phenicols, nitrofurans, nitroimidazoles [3 hours]; Pleuromutilins, tetracyclines, lincosamides [3 hours]; Macrolides, azalides, ketolides [3 hours]; Sulfonamides, dihydropyrimidines [3 hours]; Antifungals [3 hours]; Immunomodulating agents and antiviral drugs [3 hours]; Residues of veterinary medicines in food of animal origin. Rules for determining grace periods. Practical exercises - the principles of rational antibacterial chemotherapy. [3 hours]</td></tr>
<tr><td colspan="2">Assessment methods:</td><td colspan="3">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. The percentage points from each colloquium are converted into grades according to the following scale:
<table>
<tr><th>Percentage points</th><th>Grade</th></tr>
<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>
</table>
Two colloquiums (K3 and K4) are planned. 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.

2 / Assessment of the work on seminars in Module 2 (C2) is issued on the basis of presentations prepared by the student and is issued on a scale of 2 to 5. The assessment is based on compliance with the topic and the correct answers to the questions asked.

3 / Written exam, which may include open descriptive tasks and test tasks (multiple choice test). The number of questions, the proportion 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 in the exam is expressed on a relative percentage scale, where 100% is the maximum of points possible to get. The scope of knowledge on the exam covers all topics includes all subject of veterinary pharmacology course (module 1 and module 2). There is no minimum threshold of points necessary to pass the exam.
Points obtained in exam are converted into Exam Grade on the following scale:
<table>
<tr><th>Percentage points in exam</th><th>Grade</th></tr>
<tr><td>0-30</td><td>0</td></tr>
<tr><td>31-44</td><td>1</td></tr>
<tr><td>45-49</td><td>2</td></tr>
<tr><td>50-64</td><td>3</td></tr>
<tr><td>65-69</td><td>3,5</td></tr>
<tr><td>70-84</td><td>4</td></tr>
<tr><td>85-89</td><td>4,5</td></tr>
<tr><td>90-100</td><td>5</td></tr>
</table>
Two exam terms are expected. Each term is in 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.</td></tr>
<tr><td colspan="2">Formal documentation of learning outcomes:</td><td colspan="3">eHMS entry.</td></tr>
</table>

<table>
<tr><td></td><td>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.</td></tr>
<tr><td>Elements impelling final grade:</td><td>The final grade is influenced by colloquium results, assessment of work on seminars and exam grade.

First, the Virtual Grade of Module 2 is calculated.
Virtual Grade of Module 2 is calculated from the formula:
[K3 * 0.4] + [K4 * 0.4] + [(C2-2) * 0.2]
where: K3 - grade from colloquium 3, K4 - grade from colloquium 4, C2 - assessment of the work on classes (seminars).
The value calculated above is converted into a Virtual Grade of Module 2 according to the table below:
<table>
<tr><th>Calculated value</th><th>grade</th></tr>
<tr><td><0,00 - 3,00)</td><td>2,0</td></tr>
<tr><td><3,00 – 3,25></td><td>3,0</td></tr>
<tr><td>(3,25 – 3,75></td><td>3,5</td></tr>
<tr><td>(3,75 – 4,25></td><td>4,0</td></tr>
<tr><td>(4,25 – 4,75></td><td>4,5</td></tr>
<tr><td>(4,75 – 5,00></td><td>5,0</td></tr>
</table>
If the student is absent from more than 3 seminars the Virtual Grade of Module 2 is 2

The final grade, is calculated from the formula :
[The grade from the Module 1 x 0.25] + [The Virtual Grade of Module 2) x 0.25] + [The Exam Grade x 0.5].
The final grade calculated above is converted into the final grade entered into eHMS, as follows: value in the range <0; 3.0) is changing to 2; values in the range <3.0; 3.25) is rounded to 3; value in the range <3.25; 3.75) is rounded to 3.5; values in the range <3.75; 4.25) is rounded to 4; value in the range <4.25; 4.75) is rounded to 4.5; values in the range <4.75; 5.0> is rounded to 5.0.</td></tr>
<tr><td>Teaching base:</td><td>Lecture halls, seminar rooms at SGGW</td></tr>
<tr><td colspan="2">Mandatory and supportive materials :
(1) S. Giguere, J.F. Prescott, J.D. Baggot, R.D. Walker, P.M. Dowling. Antimicrobial Therapy in Veterinary Medicine, Blackwell Publishing.
(2) Veterinary Pharmacology and Therapeutics. Red. H. Richard Adams, Iowa State University.
(3) Handbook of veterinary pharmacology. Red Walter H. Hsu. Wiley-Blackwell 2008 r.
(4) Relevant scientific publications, including those of the module coordinator.</td></tr>
<tr><td colspan="2">ANNOTATIONS</td></tr>
</table>

Quantitative summary of the module:

<table>
<tr><td colspan="5">Estimated number of work hours per student (contact and self-study) essential to achieve presumed learning outcomes of the module - base for quantifying ECTS:</td><td>100 hrs</td></tr>
<tr><td>Hours theoretical:</td><td>100</td><td>Hours practical:</td><td></td><td>Hours of field exercises:</td><td></td><td>Total contact hours: 100 hrs</td></tr>
<tr><td colspan="5">Total ECTS points, accumulated by students during contact learning:</td><td>4 ECTS</td></tr>
</table>