



SZKOŁA GŁÓWNA
GOSPODARSTWA
WIEJSKIEGO

Veterinary pharmacology (1)

Educational subject description sheet

Basic information

Field of study Veterinary Medicine	Didactic cycle 2023/24	
Speciality -	Subject code WETFVMS_D.510.01701.23	
Organizational unit Faculty of Veterinary Medicine	Lecture languages english	
Study level long-cycle	Mandatory Obligatory subjects	
Study form full-time studies	Block Basic subjects	
Education profile General academic	Disciplines Veterinary medicine	
Coordinator	Wojciech Karlik	
Teacher	Wojciech Karlik, Łukasz Kiraga	
Period Semester 5	Examination Pass with grade	Number of ECTS points 4
	Activities and hours Lecture: 30 Laboratory exercises: 30	

Goals

Code	Goal
C1	Familiarization with general pharmacology: mechanisms of drugs action at the molecular, cellular, organ and whole organism levels, pharmacokinetics, general drug interactions.
C2	Familiarization with the classification of active substances used in the treatment of animals - ATCvet classification
C3	Familiarization with detailed pharmacology of organ-acting drugs: characteristics of selected veterinary drugs representing individual anatomical, therapeutic and chemical classification groups in ACTvet classification
C4	Acquainting with the basics of veterinary pharmacotherapy (indications, contraindications, side effects and drug interactions in various animal species).
C5	Acquainting with the elements of the European pharmaceutical law

Entry requirements

Animal physiology 2, Chemistry, Biochemistry 2, Biophysics, Topographical anatomy, Histology and embryology 2, Microbiology 2, Parasitology and invasiology 1

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	definitions and concepts in the field of general pharmacology, pharmacokinetics and experimental pharmacology	A.W16	Written credit
W2	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.W16	Written credit
W3	classify about 300 active substances together with their assignment to the appropriate ACTVet group (including 3 level of classification).	A.W16	Written credit
W4	drug interactions and polytherapy	A.W16	Written credit
W5	the basic level pharmaceutical law, including in the field of writing medicines on the prescription.	A.W19	Written credit
W6	the issues of drug impact on the environment and the problem of drug residues in products of animal origin.	A.W16	Written credit
Skills - Student can:			
U1	use the drug to achieve the desired changes in the functioning of a healthy body, taking into account the dose and route of administration	A.U4	Written credit
U2	choose the right drug to modify the body's functions in a given pathological condition.	A.U4	Written credit
U3	communicate knowledge in the field of drug action and justify the choice of drug for treatment.	A.U11	Written credit
Social competences - Student is ready to:			

Code	Outcomes in terms of	Effects	Examination methods
K1	uses veterinary medicinal products in a responsible manner	KS.1	Written credit
K2	selection of the drug student is primarily guided by the well-being of the patient.	KS.2, KS.4	Written credit
K3	independently finds information about new drugs and can critically evaluate them	KS.4, KS.8	Written credit
K4	involved to developing and using new drugs, evaluates the differences between drugs based on observations.	KS.5	Written credit
K5	the knowledge necessary for further education	KS.4, KS.8	Written credit

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Pharmacodynamics general principles and definition	W1	Lecture
2.	Pharmacokinetics	W1	Lecture
3.	Drug acting on musculo-skeletal system (QM). QM03 Muscle relaxants.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
4.	Drug acting on central nervous system (QN). QN01B Anesthetics, local	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
5.	QN01A Anesthetics, general	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
6.	QN02 Analgesics drugs.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
7.	QM01 Anti-inflammatory and antirheumatic products (NSAID)	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
8.	QH02 Corticosteroids for systemic use	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
9.	Drug acting on alimentary tract and metabolism (QA). QA02 Drugs for acid related disorders	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
10.	QA05 Drug used in bile and liver therapy. QA08 Antiobesity preparations. QA15 Appetite stimulants	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
11.	Drugs effect on GIT in ruminants. QC10 Lipid modifying agents.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
12.	Drug acting on cardiovascular system (QC). QC01A Cardiac glycosides. QC01B Antiarrhythmics drugs	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture

No.	Course content	Subject's learning outcomes	Activities
13.	QC01C Cardiac stimulants excl. cardiac glycosides. QC01D Vasodilators used in cardiac disease. QC03 Diuretics. Fluid electrolyte therapy	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
14.	QR Drug acting on respiratory system.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
15.	QB Drugs acting on blood and blood forming organs.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
16.	Basic concepts concerning of drugs and medications. Legal provisions (Pharmaceutical Law Act). ATCvet. classification	W1, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
17.	Pharmacology of autonomic nervous system - adrenergic system	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
18.	Pharmacology of autonomic nervous system - cholinergic system.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
19.	Drugs acting on central nervous system. QN05 Psycholeptics: QN05A Antipsychotics, QN05B Anxiolytics, QN05C Hypnotics and sedatives, Alpha-2 agonist centrally acting.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
20.	QN03 Antiepileptics. QN06 Psychoanaleptics, QN51 Products for animal euthanasia	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
21.	Drug acting on gastrointestinal tract (QA). QA03 Drugs for functional gastrointestinal disorders. QA06 Laxatives, QA07 Antidiarrheals	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
22.	QA04 Antiemetics and antinauseants	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
23.	Drug acting on cardiovascular system (QC). QC02 Antihypertensives. QC04 Peripheral vasodilators, QC05 Vasoprotectives.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
24.	QC07 Beta blocking agents, QC08 Calcium channel blockers, QC09 Agents acting on the renin-angiotensin system.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
25.	QH Systemic hormonal preparations.	W1, W2, W3, W4, W5, W6, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises

Course advanced

Activities	Methods of conducting classes
Lecture	Lecture
Laboratory exercises	Lecture, Conversation lecture, Discussion, Presentation

Activities	Examination method	Percentage
Lecture	Written credit	50%
Laboratory exercises	Written credit	50%

Activities	Credit conditions
Lecture	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 condition for passing the course is to obtain 51% of the points possible to obtain in the course
Laboratory exercises	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 condition for passing the course is to obtain 51% of the points possible to obtain in the course

Literature

Obligatory

1. Veterinary pharmacology and therapeutics /edited by Jim E. Riviere, Mark G. Papich. --Hoboken : Wiley Blackwell
2. Handbook of veterinary pharmacology /Walter H. Hsu. - Ames, Iowa : Wiley-Blackwell
3. Comparative and veterinary pharmacology /Fiona Cunningham, Jonathan Elliott, Peter Lees eds. - Berlin ; Heidelberg : Springer

Optional

1. Principles of pharmacology: the pathophysiologic basis of drug therapy /ed. David E. Golan. - Philadelphia : Lippincott Williams and Wilkins, 2005.
2. Clinical pharmacology /Aut Cynthia R.L. Webster. - Jackson : Teton NewMedia, 2001.
3. Clinical pharmacology and therapeutics /ed. Katrina L. Mealey. - Philadelphia, Pa. : Elsevier, 2013.

Calculation of ECTS points

Activity form	Activity hours*
Lecture	30
Laboratory exercises	30
Preparation for the test	40
Preparation for exercises	20
Student workload	Hours 120

Number of ECTS points	ECTS 4
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* hour means 45 minutes

Effects

Code	Content
KS.1	Absolwent jest gotów do wykazywania odpowiedzialności za podejmowane decyzje wobec ludzi, zwierząt i środowiska przyrodniczego
KS.2	Absolwent jest gotów do prezentowania postawy zgodnej z zasadami etycznymi i podejmowania działań w oparciu o kodeks etyki w praktyce zawodowej oraz do wykazywania tolerancji dla postaw i zachowań wynikających z odmiennych uwarunkowań społecznych i kulturowych
KS.4	Absolwent jest gotów do korzystania z obiektywnych źródeł informacji
KS.5	Absolwent jest gotów do formułowania wniosków z własnych pomiarów lub obserwacji
KS.8	Absolwent jest gotów do pogłębiania wiedzy i doskonalenia umiejętności
A.U4	Absolwent potrafi opisać zmiany funkcjonowania organizmu w sytuacji zaburzeń homeostazy
A.U11	Absolwent potrafi wybrać i zastosować racjonalną chemioterapię przeciwbakteryjną empiryczną i celowaną, z uwzględnieniem docelowego gatunku zwierzęcia
A.W16	Absolwent zna i rozumie mechanizmy działania, losy w ustroju, działania niepożądane oraz wzajemne interakcje grup weterynaryjnych produktów leczniczych stosowanych u docelowych gatunków zwierząt
A.W19	Absolwent zna i rozumie procedury i elementy niezbędne do wystawienia recepty na weterynaryjne produkty lecznicze