SZKOŁA GŁÓWNA GOSPODARSTWA WIEJSKIEGO

Veterinary pharmacology (2)

Educational subject description sheet

Basic information

Field of study Veterinary Medicine	**Didactic cycle** 2023/24
Speciality -	**Subject code** WETFVMS_D.520.01711.23
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	**Examination**	**Number of ECTS points**
Semester 6	Exam **Activities and hours** Lecture: 15 Laboratory exercises: 45	4

Goals

Code	Goal
C1	Acquaintance with principles of chemotherapy.
C2	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 and drug residues problems in tissues.

Entry requirements

Veterinary pharmacology 1, Pathomorphology 1
Animal physiology 2, Pathophysiology, Chemistry, Biochemistry 2, Biophysics, Animal anatomy 2, Histology and embryology 2, Microbiology 2, Parasitology and invasiology 2

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 chemotherapy.	A.W16	Written exam, Written credit
W2	the detailed pharmacology for about 200 chemotherapeutic substances including: pharmacodynamics, pharmacokinetics, side effects and contraindications in the main species of domestic animals	A.W16	Written exam, Written credit
W3	classify about 300 active substances from the group of chemotherapeutics along with their classification to the appropriate ACTVet group (including 3 level of classification)	A.W16	Written exam, Written credit
W4	the rules for writing chemotherapeutics on a prescription	A.W19	Written exam, Written credit
W5	understand the issues of drug impact on the environment and the problem of drug residues in products of animal origin.	A.W16	Written exam, Written credit
Skills – Student can:			
U1	select the appropriate chemotherapeutic for the defined infectious organism along with determining the dose and route of administration.	A.U4	Written exam, Written credit
U2	assess drug interactions and its importance at polytherapy	A.U4	Written exam, Written credit
U3	communicate knowledge in the field of drug action and justify the choice of drug for treatment.	A.U12, A.U13	Written exam, Written credit
Social competences – Student is ready to:			
K1	prescribe and use drugs responsibly.	KS.1	Written exam, Written credit
K2	choose a medicine in the best interests of the patient	KS.2, KS.4	Written exam, Written credit
K3	find on their own information on new chemotherapeutic agents	KS.4, KS.8	Written exam, Written credit
K4	assesses the differences between drugs based on their own observations	KS.5	Written exam, Written credit
K5	deepens the knowledge necessary for further education	KS.4, KS.8	Written exam, Written credit

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Principles of antibacterial chemotherapy. Principles of antiparasitic chemotherapy	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
2.	Drugs used against protozoa	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
3.	Drugs used against tapeworms and flukes	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
4.	Drugs used against nematodes	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
5.	Drugs used against external parasites	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
6.	Principles of cancer chemotherapy. Anticancer chemotherapeutics	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Lecture
7.	Disinfectants and antiseptics	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
8.	Penicillins. Beta-lactamase inhibitors	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
9.	Cephalosporins, carbapenems, monobactams	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
10.	Aminoglycoside antibiotics	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
11.	Peptide-type antibiotics	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
12.	Quinolones and fluoroquinolones	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
13.	Phenicols, nitrofurans, nitroimidazoles	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
14.	Pleuromutilins, tetracyclines, lincosamides	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
15.	Macrolides, azalides, ketolides	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
16.	Sulfonamides, dihydropyrimidines	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises

No.	Course content	Subject's learning outcomes	Activities
17.	Antifungals drugs	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
18.	Immunomodulating agents and antiviral drugs	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises
19.	Residues of veterinary medicines in food of animal origin. Rules for determining withdrawal periods. Practical exercises - the principles of rational antibacterial chemotherapy	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	Laboratory exercises

Course advanced

Activities	Methods of conducting classes
Lecture	Lecture, Problem lecture
Laboratory exercises	Problem lecture, Discussion, Presentation, Analysis of source materials, Inference

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

Activities	Credit conditions
Lecture	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). Points obtained in exam are converted into exam grade. A positive (sufficient) grade is obtained after obtaining 51% of the possible points.
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 percentage points from each colloquium are converted into grades. A positive (sufficient) grade is obtained after obtaining 51% of the possible points.

Literature

Obligatory

1. Antimicrobial Therapy in Veterinary Medicine/ S. Giguere, J.F. Prescott, J.D. Baggot, R.D. Walker, P.M. Dowling - Blackwell Publishing
2. Veterinary pharmacology and therapeutics /edited by Jim E. Riviere, Mark G. Papich. --Hoboken : Wiley Blackwell, © 2018.
3. Handbook of veterinary pharmacology /Walter H. Hsu. - Ames, Iowa : Wiley-Blackwell, 2008.

Optional

1. Veterinary psychopharmacology /Sharon L. Crowell-Davis, Thomas F. Murray, Leticia Mattos de Souza Dantas. - Hoboken : Wiley Blackwell, © 2019.
2. Clinical pharmacology and therapeutics /ed. Katrina L. Mealey. - Philadelphia, Pa. : Elsevier, 2013.
3. Comparative and veterinary pharmacology /Fiona Cunningham, Jonathan Elliott, Peter Lees eds. - Berlin ; Heidelberg : Springer, 2010.
4. Antibiotic resistance :mechanisms and new antimicrobial approaches /Kateryna Kon, Mahendra Rai. -- London ; San Diego ; Cambridge ; Oxford : Academic Press an imprint Elsevier, copyright © 2016.
5. Antibiotic resistance protocols /edited by Stephen H. Gillespie. -- New York : Humana Press, © 2018.

Calculation of ECTS points

Activity form	**Activity hours***
Lecture	15
Laboratory exercises	45
Preparing a report	5
Preparation for the test	20
Preparation for the exam	35
Student workload	**Hours** 120
Number of ECTS points	**ECTS** 4

* 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.U12	Absolwent potrafi komunikować się z klientami i z innymi lekarzami weterynarii
A.U13	Absolwent potrafi słuchać i udzielać odpowiedzi językiem zrozumiałym, odpowiednim do sytuacji
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