

Module code	M_WE_SEM5 PHARMACY
Field of study	Veterinary medicine
Module name, also the name in English	Pharmacy
	Farmacja
Language of instruction	English
Module type	obligatory
Level of studies	Long-cycle master's degree studies
Form of study	Full-time
Year of study in the field of study	III
Semester of study in the field of study	V
ECTS credits, divided into contact/non-contact hours	2 (1,4/0,6)
Academic title/degree, name of the person responsible for the module	Prof. dr hab. Cezary J. Kowalski
Unit teaching the module	Department of Pharmacology, Toxicology and Environmental Protection
Module objective	<p>Introduction to the basic concepts of general pharmacy. Discussion of applied pharmacy, with emphasis on formulation. Detailed discussion of the forms of drugs used in veterinary medicine, the mode of prescribing prescription drugs, their making in in the pharmacy. Familiarization with the elements of drug product technology. Familiarization with the legal requirements for manufacturing, distribution, sale and control of drugs. Discussion of the most important active substances found in raw plant materials and the accompanying substances used in various drug formulas. Familiarization of students with the knowledge of the use of effective aseptics and antiseptics. Developing competence in the informed and responsible application of knowledge gained in the course.</p>
The learning outcomes for the module include a description of the knowledge, skills and social competences that the student will gain after completing the module.	Knowledge:
	K1 knows the law regarding the manufacture and marketing of veterinary drugs and medicinal products.
	K2 knows the concepts, definitions and nomenclature of general pharmacy
	K3 knows the principles of prescription, structure of a prescription, ways of prescribing prescription drugs, characteristics of particular forms of drugs together with the method of their manufacture
	K4 understands the importance of European and national pharmacopoeias and the differences between a pharmacopoeia and a list of authorised drugs
	K5 knows the most important accompanying substances used in pharmaceutical preparation
	Skills:
	S1 is able to prescribe the ready-to-use and prescription drugs, and is able to explain the use of prescribed medications

	S2 can determine the appropriate composition and form of a prescription drug to achieve a therapeutic goal
	S3 Is able to select appropriate disinfection methods (chemical and physical substances with antimicrobial action) to maintain aseptic or antiseptic action.
	Social competences:
	C1 is primarily concerned for the patient's welfare when choosing a medication
	C2 understands responsibility for prescribed medications
Prerequisites and additional requirements	-
Module program content	<p><i>Lecture topics:</i></p> <ol style="list-style-type: none"> <li>1. Subject characteristics, definitions (product, raw material, substance), pharmacy regulatory standards, history of pharmacy [3 hrs].</li> <li>2. Formulation inconsistencies. Adverse drug reactions- classification [4 hrs].</li> <li>3. Modern drug formulations [4 hrs].</li> <li>4. Aseptics and antiseptics. Characteristics of chemical disinfectants. [4 hrs.]</li> </ol> <p><i>Exercise topics:</i></p> <ol style="list-style-type: none"> <li>1. Polish vs European Pharmacopoeia [2 hrs].</li> <li>2. Characteristics of drug forms - Solid drugs- Characteristics of forms, manufacturing technology, examples of writing out prescriptions. [2 hrs.]</li> <li>3. Characteristics of drug forms - Semi-solid drugs- Characteristics of forms, technology of preparation, examples of writing out prescriptions. [2 hrs.]</li> <li>4. Characteristics of drug forms - Liquid drugs- Characteristics of forms, manufacturing technology, examples of writing out prescriptions. [3hrs].</li> <li>5. Practical exercises - manufacture of prescription drugs (solid, semi-solid) [2 hrs].</li> <li>6. Practical exercises - manufacture of prescription drugs (liquid) [2 hrs].</li> </ol>
List of core and supplementary literature	<ol style="list-style-type: none"> <li>1. European Pharmacopoeia (Ph. Eur.) 10th Edition</li> <li>2. Textbook of Pharmacy Practice, Pharma Med Press, 2020</li> <li>3. Veterinary Pharmacology and Therapeutics, Jim E. Riviere, Mark G. Papich</li> <li>4. Scientific articles</li> </ol>
Planned forms/activities/teaching methods	Lecture, multimedia presentations, group work on issues, discussion, preparation for the credit, preparation for the classes

<p>Verification methods and ways of documenting the achieved learning outcomes.</p>	<p>Checking of knowledge is done in written form, after completion of a given subject block. There will be two written colloquia per semester consisting of open and closed descriptive tasks and test tasks. The total points earned on a given colloquium are expressed on a relative percentage scale, where 100% is the maximum number of points possible to gain on the colloquium. The scope of knowledge tested on the colloquium includes lecture and exercise topics.</p> <p>Credit for the semester/module1 is based on:</p> <ul style="list-style-type: none"> <li>• scoring a minimum of 51% on each of the written colloquia.</li> <li>• The semester grade is calculated as the arithmetic mean of grades <math>\geq 3.0</math> (sufficient) from 4 written colloquia.</li> </ul> <p>In addition, attendance at at least 85% of the exercises in the module plan is required to pass the course.</p> <p>The final exam consists of a theoretical written part (open-ended descriptive tasks, closed-ended descriptive tasks, single- and/or multiple-choice test tasks) and a practical part (writing out prescriptions for prescription drugs). The scope of knowledge for the exam covers all topics covered in the Pharmacy course. The practical part of the exam is 25% of the maximum number of points available and its results must be positive in order to pass the entire exam. The total points earned on the exam are expressed on a relative percentage scale, where 100% is the maximum number of points possible to gain.</p> <p>A percentage scale of grades (colloquia and exam):  very good - 91-100%,  plus good - 81-90%  good - 71-80%  plus sufficient - 61-70%,  sufficient - 51-60%,  insufficient - 0-50%</p>																																												
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The workload related to the classes requiring direct participation of academic teachers:	attendance at lectures	15	0.6	
	attendance at practical classes	15	0.6	
	Consultations	3	0.12	
	colloquium in practical classes	1	0.04	
	Examination / retake examination	1	0.04	
	TOTAL with direct involvement of the teacher	35	1.4	
Relation of module learning outcomes to course learning outcomes.	Module learning outcome code - course learning outcome code K1 --- A.W19.+ , A.W20.+ , B.W9.+ K2 --- A.W19.+ , A.W20.+ K3 --- A.W19.++ , A.W20++ K4 --- A.W19.+ K5 --- A.W19.+ , A.W20++ S1 --- B.U9.+ , B.U10.++ , B.U13.++ S2 --- B.U9.+ , B.U10.++ , B.U13.++ S3 --- B.U14.++ C1 --- K1++ C2 --- K7++			
Elements and values affecting the final grade	Module Assessment: Colloquium1 - weighting of 12.5% Colloquium2 - weighting of 12.5% Credit / exam - weighting of 75% The final grade for the course is calculated as follows: [Course grade x 0.25] + [Exam grade x 0.75]. The value calculated above is converted to a final grade, as follows: values in the range <0; 3.0) are converted to 2; values in the range <3.0; 3.25) are rounded to 3; values in the range <3.25; 3.75) are rounded to 3.5; values in the range <3.75; 4.25) are rounded to 4; values in the range <4.25; 4.75) are rounded to 4.5; values in the range <4.75; 5.0) are rounded to 5.0.			