

PHARMACY

Study program	Veterinary Medicine
Year of study	VI
Semester	I
Regime of discipline	DOB
Category	Dsf
Number of lectures hours per week	1.5
Number of seminar/laboratory/project hours per week	1
Total number of hours according to the curriculum: lectures/seminars/laboratory/project	21/14
Number of transferable credits	5

SPECIFIC SKILLS

Professional Competence	Using the concepts of pharmacology in fair and responsible prescribing of drugs in animals. Using basic criteria for establishing pharmaceutical efficacy, toxicity validity and preservation veterinary medicinal products. Implementing a control system of a medicine warehouse, pharmacies, pet shops etc., and appropriate therapy plans for animals. In this respect are the main therapeutic remedies / species, interspecific scale - dose extrapolation (including allometric), drug combinations species (synergistic potentiation and attenuation), drug incompatibilities - physical and chemical properties; drug interactions - drugs by group and / or system, adverse drug reactions - toxic, allergic, mutagenic, teratogenic, carcinogenic, idiosyncratic, drug tolerance, and resistance of antibiotic resistance.
--------------------------------	---

LEARNING OUTCOMES

Knowledge	Using basic criteria for establishing pharmaceutical efficacy, toxicity validity and preservation veterinary medicinal products. Implementing a scheme of control of a medicine warehouse, pharmacies, pet shops etc., and appropriate therapy schemes animals. Preparing, preserving, release and marketing of medicines and other pharmaceutical formulations for veterinary medicinal products (AUV).
Skills	This discipline is seeking skills training in understanding drug action in the promotion and use as appropriate strict veterinary drugs in light of new European regulations related to veterinary medicine in accordance with the EU Directive.
Responsibility and autonomy	To apply and promote responsible use of techniques and medicinal products to ensure proper treatment of animals to protect the food chain, the environment and human.

COURSE OBJECTIVES

General objective of the course	With the establishment of the European Agency for the Evaluation of Medicinal Products and the creation of departments responsible for the testing and control of veterinary medicinal products, the need emerged for the training of veterinary specialists in the specific field of veterinary pharmacy and pharmaceuticals, including the marketing, use, promotion, and regulatory control of these products.
Specific objectives	For this reason, this discipline, relatively newly established, is seeking skills training in understanding drug action in the promotion and use as appropriate strict veterinary drugs in light of new European regulations related to veterinary medicine in accordance with the EU Directive.

COURSE CONTENT

LECTURES	Number of hours
Topic no. 1. Factors that influence the stability and conservability drugs (internal, external). Preservations medicines, pharmaceutical preparations conditioning. Factors influencing the drug stability and conservation: internals and externals. Drug conservation: preservative and stabilizing substances. Pharmacy control. Pharmaceutical specific preparations conditioning. Wrap types.	3

Topic no. 2. Elements of bio pharmacy Definition. The conditioning influence upon therapeutically response (active substances, pharmaceutical formulation, preparation mode, technique). Notions about drug absorption, saliva, gastric mucous and intestinal juice role, blood role. Fate of oral and parenteral formulations.	3
Topic no. 3. Powder formulations Definition, classification, properties. Powders control and preservation. Tablets Components: active and auxiliary substances (dissolver, aggregates, disaggregates, lubricants, antistatic). Tablets press methods and press machines types. Quality control, Granulation and coated tablets. Coating methods: layering, leveling, and polishing.	3
Topic no. 4. Pills and boluses. Definition, classification, active and auxiliary substances. Preparation and preservation mode. Capsules. Most usual types used in veterinary therapy. Quality control.	3
Topic no. 5. Soft drug forms (Salve, Ointments). Definition. Classification. Skin penetration. Active principles. Exipients types (oil bases, hydrogenates oils, silicones, hydrocarbons, methylcelluloses, carbopoles). Ointment preparation methods. Conditioning and control. Pastes. Creams. Emplastres. Oral pastes. Classification, preparation, control.	3
Topic no. 6. Liquid forms. Definitions. Prepared solutions. Active substances, solvents, classification. Advantages, disadvantages. Solutions preparation. Solving process. Real dispersion (molecular, colloidal and mechanical suspensions). Conditioning types.	3
Topic no. 7. Parenteral liquid forms Classification. Active substances, solvents. Receptacles. Isotonisation. pH adjustment. Sterilization and labeling. Vials and other packaging. Injectable forms control. Perfusions, implants.	3
Total	21
SEMINAR/LABORATORY	Number of hours
Topic no. 1. Pharmaceutic techniques Gravimetric and volumetric measures, sterilization, filtration, centrifugation, evaporation, distillation, drying, milling and spraying, sifting and sizing, mixing.	2
Topic no. 2. Drugs' conservation Drugs groups classifying after the conservation mode. Means and methods of preservation. Pharmaceutical incompatibilities. Physical: immiscibility, insolubility, precipitation, absorption, saltiness, consistence modifying, colloidal state modifying. Chemical: precipitation reaction, double change reactions, addition, neutralization, oxide reducing. Pharmacokinetic and pharmacodynamics. Demonstrations	2
Topic no. 3. Solid forms Powders and from powders medicines forms classification, preparation, dividing, sifting. Formulations obtained from agglomerated powders: tablets (classification, advantages, disadvantages, components, preparing, misses, and quality control). Special use tablets (oral, subcutaneous, hypodermic, effervescent, vaginal), triturates tablets, pastilles. Pills and boluses (preparation, control, preservation). Special boluses. Suppository. Globules. Medicinal capsules (amylase, gelatinous, industrial types). Species. Specific conditioning presentation.	3
Topic no. 4. Soft drugs formulations (Unguents / Ointments) Electuaries (oral pastes). Salves. Paste. Emplastres. Liniments and creams. Specific preparations presentation..	3
Topic no. 5. Liquid drugs forms. Solutions of preparation: molecular, colloidal and mechanic dispersions. Extractive formulas: solution types, mixtures, macerates, infusions, decoct emulsions, mucilage, alcoholic solutions, aromatic waters, liquors etc. Injectable formulations. Aerosols. Penetration and resorption. Classification. Aerosol spraying. Dispersion's obtaining. Recipients and propulsions. Specific conditioning presentation.	2

BIBLIOGRAPHY:

- E. Dumitrescu Cristina R.T. (2013) Agroprint Timisoara. Farmacie veterinară-lucrări practice,
- Cristina R.T. (2003) Receptură, Calcul și Interacțiuni în Medicina Veterinară. Sedona Timișoara, 973-9345-42-5,
- Cristina R.T. (2004) Ghid de dozaj și teste de Farmacologie veterinară. Ed. 1, Ed. 2 ad. Brumar Timișoara 973-8057-46-9, 973-602-020-7
- Cristina R.T., P.A. Darău (2005) Practicum de farmacologie și terapie veterinară. Vasile Goldiș Univ. Press, Arad. 973-664-071-X
- Cristina R.T. (2010) Elemente de farmacovigilență și toxicovigilență în medicina veterinară. Brumar Timisoara.

ASSESSMENT

Activity type	Assessment criteria	Assessment methods	Percentage of final grade
Lectures	Examining course	(writing / oral)	60%
Seminar/laboratory/clinical sessions	Examining P.W./Semester	Colocvium in writing (Prescribing and a therapeutic calculation solving)	20%
Projects / reports	Evaluation of project presentations	Minimum one bibliographical project / presentation semester	20%

Course coordinator: Prof. Dr. Cristina T.Romeo

Practical activities coordinator L/S/P: Prof. Dr. Cristina T.Romeo