PARASITOLOGY AND PARASITIC DISEASE AND CLINICAL LECTURES ON SPECIES 3

Study program	Veterinary Medicine
Year of study	V
Semester	9
Regime of discipline	DOC
Category of the discipline	Dsc
Number of lectures hours per week	2
Number of seminar/laboratory/project hours per week	3
Total number of hours according to the curriculum: lectures/seminars/laboratory/project	28 / 42
Number of transferable credits	5

SPECIFIC SKILLS

Professional Competence	C_2 - Knowledge of appropriate epidemiological methods to identify parasitic diseases, including zoonoses. - Interpretation of the epidemiological investigation and information related to parasitic diseases for elaborating animal health protection and public health programs. - Applying treatments, biosecurity measures and other measures to prevent and combat parasitic diseases, animal identification and managing their circulation. - Development of protocols and methods to prevent and combat diseases for reducing the risk of transmission to animals and humans. C_5 – Indication of the nutritional and metabolic status in accord with the principles of maintenance, feeding, production etc. C_6 – Using scientific research in the description of the occurrence and spread of diseases in order to issue effective strategies against them, including the testing of medicinal and biocide products, diagnostic sets etc. - Applying the specific principles and methodologies of fundamental and applied scientific research in bio-medical sciences. - Critical evaluation of scientific investigation based on the current rules of research. - Developing the capacity to capitalize scientific research. - Applying the research plan consistent with the methodology of research, the principles of ethics and good practice in research.

LEARNING OUTCOMES

Knowledge	Knowledge of the biology, epizootiology, pathogenesis, diagnosis, treatment, prevention and control of the main parasitic diseases in animals, including protozoal, helminthic, arachno-entomological and major mycotic conditions.
Skills	1. 1.4 Promote, monitor and contribute to maintaining health and safety of oneself, patients, clients, colleagues and the environment in the veterinary setting; demonstrate knowledge about the principles of quality assurance; apply principles of risk management in practice. 2. 1.5 Communicate effectively with clients, the public, professional colleagues and responsible authorities, using language appropriate to the audience concerned and in full respect of confidentiality and privacy. 3. 1.9 Be able to review and evaluate literature and presentations critically. 4. 1.10 Understand and apply principles of One Health to ensure veterinary Good Clinical Practice, and research-based and evidence-based veterinary medicine. 5. 1.11 Demonstrate ability to critically analyse evidence, cope with incomplete information, deal with contingencies, and adapt knowledge and skills to varied scenarios and contexts. 6. 1.16 Obtain an accurate and relevant history of the individual animal or animal group, and its/their husbandry and environment.

	7. 1.17 Handle and restrain animal patients safely and with respect of the animal and instruct others in helping the veterinarian to perform these techniques. 8. 1.18 Perform a complete clinical examination and demonstrate ability in clinical decision-making. 9. 1.19 Develop appropriate treatment plans and administer treatment in the interest of the animal under their care with regard to the resources available and to appropriate public health and environmental considerations. 10. 1.21 Assess the physical condition, welfare and nutritional status of an animal or group of animals and advise the client on principles of husbandry, feeding, reproduction, production, welfare, individual health, herd health and public health. 11. 1.22 Collect, preserve and transport samples, select appropriate diagnostic tests, interpret and understand the limitations of the test results. 12. 1.23 Communicate clearly and collaborate with referral and diagnostic services, including providing an appropriate history. 13. 1.24 Use basic diagnostic equipment and carry out an examination effectively as appropriate to the case, in accordance with good health and safety practice and current regulations. Understand the contribution of digital tools and artificial intelligence in veterinary medicine. 14. 1.25 Recognise signs of possible notifiable, reportable and zoonotic diseases as well as abuse of animals and take appropriate action, including notifying the relevant authorities. 15. 1.26 Access the appropriate sources of data on information and legislation relating to animal care and welfare, animal movement, notifiable and reportable diseases, use of medicines, including responsible use of antimicrobials. 16. 1.27 Prescribe and dispense medicines correctly and responsibly in accordance with legislation and latest guidance. 17. 1.29 Recommend and evaluate protocols for biosecurity, and apply these principles correctly. 18. 1.34 Perform necropsy in all common animal species, including sampling, dispatching and reporting. **19.** 1.37 Protect public health by identifying conditions that are directly or indirectly related to animals, their products and by-products, when they contribute to the protection, conservation and improvement of human health. **20.** 1.38 Advise on and implement preventive and eradication programmes appropriate to the disease and species, in line with accepted animal health, animal welfare, public health and environmental health standards.
Responsibility and autonomy	Responsible and autonomous application of diagnostic, therapeutic, preventive and biosecurity principles in parasitic diseases, with proper professional conduct in clinical, laboratory and field activities.

COURSE OBJECTIVES

General objective of the course	It is represented by the theoretical training and consolidation of practical skills on clinical examination of livestock and pets and the development of the capacity of correlative interpretation of clinical signs together with the laboratory exam results in order to establish the parasitological diagnosis and to take the most effective measures of prevention and combat. Providing the skills necessary to carry out scientific research in parasitology.
Specific objectives	Familiarizing students with the parasites morphological characters, with the study of epizootology and with the parasites pathogenes actions in relation to host reactions. To use properly the scientific language to describe parasitic diseases, respecting the approaching algorithm (definition, etiology, clinical manifestations, pathological changes, diagnosis, prognosis, treatment, prevention and control).

	To know and identify parasitic diseases of domestic and wild animals, caused by: protozoa, trematoda, cestoda, nematoda, arachno-entomoses and the most important mycoses. To explain the pathophysiological mechanisms of parasitic diseases. To acquire knowledge and skills on coproscopical and hematological diagnosis of parasitosis. Laboratory diagnosis is focused on the skin, muscle, secretions and excretions, urine examination, etc. Based on morphological characteristics of the parasites, students are able to identify various parasites species on slides or in jars/recipients To argue the diagnosis in parasitosis, on the basis of selective interpretation of clinical and laboratory results. During clinical trial field trips are carried out, studying the epizootic situation. To integrate theoretical knowledge with practical results of epidemiological, clinical, pathological and laboratory investigations, to establish a correct diagnosis and, based on the results, to determine the best therapeutic approach. Learning the forms and wording of clinical documents (observation sheet, register of consultations, addresses for sending samples of feces, blood, urine, cadavers, organs etc.). To strengthen knowledge and skills (intellectual and practical) for scientific investigation of parasitosis.

COURSE CONTENT

LECTURES	Number of hours
I. PROTOZOOSIS Leishmaniosis. Ichthyophtiriosis.	4
II. NEMATODOSIS Anisakidosis. Dirofilariosis	4
III. ARACHNOSIS The mange mite of sheep, goats, cattle, pigs, horses, rabbits, carnivores, and birds. Demodicosis. Tick parasitism in mammals and birds. Varroosis. Acarapiosis.	11
IV. ENTOMOSIS Anoplurosis. Malophagosis. Parasitism with Diptera. Parasitism with Cimicidae. Culicidae, Culicoizi. Hypodermosis. Estrosis. Gasterophylosis. Sheep cutaneous myasis. Braulosis.	7
V. DERMATOMYCOSIS Dermatophytosis. Bovine Trichophytosis. Mallaseziosis.	2
CLINICAL SESSIONS	Number of hours
Case Management and Parasitological Control – General Concepts	6
Parasitological Control – Ruminants	6
Parasitological Control – Equines	6
Parasitological Control – Swine	6
Parasitological Control – Poultry	6
Parasitological Control – Carnivores	6
Necropsy-Based Parasitological Diagnosis	6

BIBLIOGRAPHY:

1.MEDERLE NARCISA, DĂRĂBUȘ, GH. (2018) - Mycotic diseases, Tempus Timișoara Publishing House.
2. MIKE SERVICE (2012) – Medical Entomology for students, Cambridge University Press.
3. ANNE ZAYAC, GARY CONBOY (2012) - Veterinary Clinical Parasitology, Wiley Blackwell Press.
4. GARY MULLEN, LANCE DUNDEN (2019) – Medical and Veterinary Entomology, Academic Press.
5. M., TAYLOR, R., COOP, R., WALL (2016) – Veterinary Parasitology, Wiley Blackwell Press.
6. WILIAM FOREYT (2001) – Veterinary Parasitology, Wiley Blackwell Press.
7. Cours notes
8. Pubmed information

ASSESSMENT

Activity type	Assessment criteria	Assessment methods	Percentage of final grade
Lectures	Presentation of parasitic diseases – accuracy and	Written and Oral	50%

	completeness of the information regarding: etiology, epidemiology, pathogenesis, clinical manifestations, morphopathological changes, diagnosis, prognosis, treatment, prophylaxis, and control. Use of appropriate scientific language – the use of clear, coherent, and scientifically appropriate language specific to the medical-veterinary field. Application of knowledge in pathophysiology/immunology – understanding the pathophysiological and immunological mechanisms involved in parasitic diseases. Ability to explain general systemic disorders in the context of parasitic infestations. Integration of this knowledge into the interpretation of the clinical picture and the course of the disease. Integration and correlation of clinical and paraclinical data – the ability to correlate theoretical knowledge with the results of clinical and paraclinical investigations. Rigor in establishing the diagnosis. Logical justification of the diagnosis based on the available data. Establishment of therapeutic and prophylactic management – the correct and justified selection of treatment. Knowledge of the principles governing the use of antiparasitic drugs. Proposal of appropriate prophylactic and control measures, adapted to the epidemiological context. Capacity for synthesis and clinical reasoning – integration of information into a coherent clinical perspective. Capacity for critical analysis and clinical case-solving. Clarity of expression and argumentation.	exam	
	Course presence	Coefficients	10%
Clinical sessions	Adherence to the clinical examination plan and completion of the observation sheet – correct application of the stages of the clinical examination; identification of clinical signs suggestive of parasitic diseases; correct, clear, and complete completion of the clinical observation sheet. Ability to identify parasites in different organs and tissues through necropsy examination – compliance with necropsy technique and biosecurity regulations; recognition of parasite-specific locations within the body; correct identification of parasitic forms; correlation of morphopathological lesions with the presence of parasites and their interpretation. Ability to identify parasitic elements through laboratory examinations – correct selection and use of parasitological diagnostic methods (coproparasitological examination, smears, skin scrapings, microscopic examination); interpretation of laboratory results and their correlation with the clinical picture. Integration of clinical, necropsy, and laboratory data – formulation of an accurate diagnosis; development of a reasoned differential diagnosis.	Ongoing evaluation	40%

	Establishment of therapeutic management and control measures – proposal of an appropriate antiparasitic treatment; recommendation of prophylactic and control measures according to species, production system, and epidemiological context. Understanding of the economic and animal health impact of parasitic diseases. Practical skills – compliance with hygiene, biosecurity, and occupational safety regulations. Responsibility in medical practice and in diagnostic and therapeutic decision-making. A slightly more polished version for a syllabus, rubric, or academic evaluation document would be: Adherence to the clinical examination protocol and completion of the clinical record – correct application of the stages of clinical examination, identification of clinical signs suggestive of parasitic diseases, and accurate, clear, and complete completion of the clinical record. Ability to identify parasites in various organs and tissues during necropsy examination – compliance with necropsy technique and biosecurity standards, recognition of parasite-specific predilection sites within the body, accurate identification of parasitic forms, and correlation and interpretation of morphopathological lesions associated with parasitic presence. Ability to identify parasitic elements through laboratory examinations – correct selection and application of parasitological diagnostic methods (coproparasitological examination, smears, skin scrapings, microscopic examination), as well as interpretation of laboratory findings in correlation with the clinical picture. Integration of clinical, necropsy, and laboratory data – formulation of an accurate diagnosis and development of a well-argued differential diagnosis. Establishment of therapeutic management and control measures – proposal of appropriate antiparasitic treatment and recommendation of prophylactic and control measures according to species, husbandry system, and epidemiological context. Understanding of the economic and veterinary public health impact of parasitic diseases. Practical skills – compliance with hygiene, biosecurity, and occupational safety standards. Responsibility in medical practice and in diagnostic and therapeutic decision-making.		
Other activities			

Course coordinator: Prof. Mederle Narcisa, PhD
Practical activities coordinator L/S/P: Prof. Mederle Narcisa, PhD