

PARASITOLOGY AND PARASITIC DISEASE AND CLINICAL LECTURES ON SPECIES 1

Study program	Veterinary Medicine
Year of study	IV
Semester	1
Regime of discipline	DOB
Category of discipline	Dsc
Number of lectures hours per week	2
Number of seminar/laboratory/project hours per week	2
Total number of hours according to the curriculum: lectures/seminars/laboratory/project	28 /28
Number of transferable credits	4

SPECIFIC SKILLS

Professional Competence	<p>C₂ - Knowledge of appropriate epidemiological methods to identify parasitic diseases, including zoonoses.</p> <ul style="list-style-type: none"> - 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. <p>C₅ – Indication of the nutritional and metabolic status in accord with the principles of maintenance, feeding, production etc.</p> <p>C₆ – 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.</p> <ul style="list-style-type: none"> - 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.
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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	<ol style="list-style-type: none"> 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.

	<ol style="list-style-type: none"> 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	<p>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.</p> <p>Providing the skills necessary to carry out scientific research in parasitology.</p>
Specific objectives	<p>Familiarizing students with the parasites morphological characters, with the study of epizootology and with the parasites pathogenes actions in relation to host reactions.</p> <p>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).</p>

	<p>To know and identify parasitic diseases of domestic and wild animals, caused by: protozoa, trematoda, cestoda, nematoda, arachno-entomoses and the most important mycoses.</p> <p>To explain the pathophysiological mechanisms of parasitic diseases.</p> <p>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</p> <p>To argue the diagnosis in parasitosis, on the basis of selective interpretation of clinical and laboratory results.</p> <p>During clinical trial field trips are carried out, studying the epizootic situation.</p> <p>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.</p> <p>Learning the forms and wording of clinical documents (observation sheet, register of consultations, addresses for sending samples of feces, blood, urine, cadavers, organs etc.).</p> <p>To strengthen knowledge and skills (intellectual and practical) for scientific investigation of parasitosis.</p>
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COURSE CONTENT

LECTURES	Number of hours
Chap. I. GENERAL PARASITOLOGY	
General characteristics of the parasites and parasitism. The pathogenesis in parasitosis. Study principles of epizootiology in parasitic diseases.	6
Chap. II. PROTOZOA	
Leishmaniosis. Trichomonosis in birds. Bovine trichomonosis. Histomonosis. Coccidiosis in galiformes, columbiformes, anseriformes, ruminants, pigs, rabbits. Sarcosporidiosis. Cryptosporidiosis. Toxoplasmosis. Nosemosis. Encephalitozoonosis. Babesiosis in bovine, ovine, horses, dogs. Theileriosis. Balantidiosis. Neosporosis. Ichthyophthiriasis.	17
Chap. III. TREMATODA	
Fasciolosis. Dicrocoeliosis. Paramphistomiasis. Prosthogonimosis. Trematodosis in birds. Trematodosis in carnivores. Opisthorchiasis.	5
SEMINAR/LABORATORY	Number of hours
Parasitological methods of examination.	2
Parasitological methods of examination.	2
Etiology and diagnosis in trypanosomiasis, trichomonosis, giardiasis and histomonosis.	2
Etiology and diagnosis in bird coccidiosis.	2
Etiology and diagnosis in mammal coccidiosis.	2
Etiology and diagnosis in toxoplasmosis, sarcosporidiosis, cryptosporidiosis and nosemosis.	2
Etiology and diagnosis in babesiosis.	2
Etiology and diagnosis in fasciolosis.	2
Etiology and diagnosis in dicrocoeliosis and paramphistomiasis.	2
Etiology and diagnosis in trematodosis from carnivores and birds.	2
Etiology and diagnosis in cestodosis from ruminants and birds.	2
Etiology and diagnosis in cestodosis from carnivores.	2
Etiology and diagnosis in muscular and serous cysticercosis.	2
Etiology and diagnosis in hydatidosis and coenurosis.	2

BIBLIOGRAPHY:

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3. Veterinary helminthology Angus Dunn M. London: William Heinemann medical books, 1978
4. An atlas of protozoan parasites in animal tissues C. H. Gardiner, R. Fayer, J.P. Dubey Agricultural Research Service, 1988
5. The epidemiology and control of gastrointestinal parasites of sheep in Australia A. D. Donald, W. H. Southcott, J. K. Dineen Australia: Division of Animal Health, 1978

6. Diagnostic Parasitology for Veterinary Technicians. Third Edition Charles M. Hendrix, Ed Robinson Mosby, 2006
7. Laboratory procedures for veterinary technicians. 5th Edition Charles M. Hendrix, Margi Sirois Mosby, 2007
8. Opportunistic infections: Toxoplasma, Sarcocystis and Microsporidia David S. Lindsay, Louis M. Weiss Kluwer Academic Publishers, 2004
9. Parasitology for veterinarians Dwight D. Bowman W. B. Saunders Company, 1990
10. Helminths, arthropods & protozoa of domesticated animals E. J. L. Soulsby London: Bailliere, Tindall and Cassell, 1968
11. Fine Structure of Parasitic Protozoa E. Scholtyseck New-York: Springer-Verlag, 1979
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13. Invertebrate structure and function E.J.W. Barrington John Wiley Sons Inc, 1967
14. Canine dermatology Éric Guaguère, Pascal Prélaud, Mark Craig Kalkanxis, 2008
15. Ticks of domestic animals in Mediterranean region Estrada-Pena A., Bouattour A., Camicas Jl., Walker Ar. University of Zaragoza, 2004
16. Flea Biology and control F. Krämer, N. Mencke Springer, 2001
17. Dog parasites and their control F. Rochette Janssen Animal Health, 1999
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49. Course notes.

ASSESSMENT

Activity type	Assessment criteria	Assessment methods	Percentage of final grade
Lectures	Presentation of parasitic diseases (etiology, epidemiology, pathogenesis, clinical manifestations, pathological changes, diagnosis, prognosis,	Written and Oral exam	50%

	<p>treatment, prevent and combat), by using appropriate language.</p> <p>Applying characteristics physiopathology knowledge in common systemic disorders and the ability to integrate this knowledge into a wider clinical and pathogenic context of parasitic diseases.</p> <p>Corroborating of theoretical knowledge and clinical and laboratory investigation results in diagnosis, but also to establish therapeutic approach.</p>		
	Course presence	Coefficients	10%
Seminar/laboratory/clinical sessions	Parasites identification from jars and slides. Parasites elements identification from faeces, scraped skin and from various pathological materials.	Ongoing evaluation	40%
Other activities			

Course coordinator: Prof. Ilie Marius, PhD

Practical activities coordinator L/S/P: Senior Lecturer Imre Mirela, PhD