



## ЦЕНТЪР ЗА ОБУЧЕНИЕ – БАН

1000 София  
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### Basic Information:

Course Title: PARASIT-HOST INTERRELATIONSHIPS. BASIC PRINCIPLES OF DIAGNOSTICS, THERAPY AND PROPHYLAXIS OF PARASITOSEs

Lecturer: Prof. Svetlozara Lyubomirova Petkova, PhD

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Total Teaching Hours: 30

### Annotation (up to 150 words)

The aim of this course is to expand the knowledge of doctoral students /biologists, physicians, veterinarians, etc./ in the field of parasitology. It provides an integrated approach to parasitology, covering key scientific disciplines and challenges related to parasites and their impact on animal and human health. The course aims to prepare doctoral students and specialists in veterinary medicine, biology and ecology with the necessary knowledge and skills to recognize and deal with parasitic infections. They will be introduced to modern equipment and methods for diagnosing parasitosis, as well as innovative approaches to therapy and prevention. These modules will not only provide theoretical knowledge, but also practical skills.

### Course content (brief description by topics or modules)

**Topic / Module 1: Fundamentals of Parasitology.** Definition and Classification of Parasites (Endoparasites and Exoparasites). Life Cycles of Parasites. Parasite-Host Relationships: Types (Obligate, Facultative, Periodic)

**Topic / Module 2: Immunology of parasitosis.** Immunological response of the host against parasites. Mechanisms of evasion of the immune response by parasites. Relationship between the immune system and parasites.

**Topic / Module 3: Zoonoses and parasitosis of public health importance.** Definition of zoonoses and main representatives (atypical and classic zoonoses).

Parasitoses from animals that pose a risk to human health (toxoplasmosis, trichinosis, larva migrans). Transmission routes and prevention of parasitic infections in humans.

Role of livestock and meat processing industry in the spread of zoonoses.

**Topic / Module 4: Experimental Biological Parasitology.** Current research in the field of experimental parasitology. Models of parasitic infections in laboratory conditions. Genetic, molecular and epidemiological aspects of parasites.

New methods for the development of vaccines and therapeutic agents against parasites.

**Topic / Module 5: Diagnosis and therapy of parasitosis.** Methods for laboratory diagnosis of parasitosis (microscopy, serological tests, PCR). Clinical symptoms and signs of various parasitic infections. Drugs for the treatment of parasitic infections (antiparasitic and antiprotozoal drugs).

Problems of resistance and innovations in therapy.

### Teaching and assessment methods

Lecture course



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Consultative course

Assessment by interview

### Competencies acquired as a result of training (3–5 points)

**Topic / Module 1:** Understanding the principles of parasite classification. Deepening knowledge about the life cycles and adaptations of parasites.

**Topic / Module 2:** Study of the interaction between parasites and the host immune system. Understanding the role of immunology in the diagnosis and treatment of parasitic infections

**Topic / Module 3:** Understanding the importance of zoonoses and parasitosis in the context of public health. Awareness of the risks of parasitic infections and the importance of preventive measures in the food industry and veterinary practice.

**Topic / Module 4:** Study of the latest advances in experimental parasitology and their significance for the study of parasitic diseases.

Understanding the role of scientific research in improving strategies for the prevention and treatment of parasitic infections.

**Topic / Module 5:** Acquisition of practical skills for parasite identification. Overview of pharmacological approaches in the treatment of parasitic infections. Understanding the challenges in the treatment of parasitic infections related to resistance and the importance of early diagnosis and its relevance for therapy.

### Literature:

1. Clinical Parasitology and Tropical Medicine. Prof. Petar Petrov and Prof. Rositsa Kurdova, 2016
- Loker, E. S., & Hofkin, B. V. (2022). Parasitology: a conceptual approach. CRC Press.
2. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, *eighth edition*, Edited by: John E. Bennett, Raphael Dolin and Martin J. Blaser . DOI: 10.1016/C2012-1-00075-6
3. Esposito, M. M., Turku, S., Lehrfield, L., & Shoman, A. (2023). The impact of human activities on zoonotic infection transmissions. *Animals*, 13(10), 1646.
4. Florez-Vargas, O., Bramhall, M., Noyes, H., Cruickshank, S., Stevens, R., & Brass, A. (2014). The quality of methods reporting in parasitology experiments. *PLoS One*, 9(7), e101131.