

MEDICAL UNIVERSITY – PLOVDIV
FACULTY OF MEDICINE

SYLLABUS
IN
BIOLOGY OF PARASITES
(Elective course)

Approved by the Department Council on 21 May 2025
Confirmed by the Faculty Council - Protocol № 6/18.06.2025

Name of the discipline
ELECTIVE COURSE “BIOLOGY OF PARASITES”

CURRICULUM

Discipline	Exam in semester	Lectures and practical lessons				Credits for self-preparation	Total credits	Hours by year and semester	
								I year	
Biology of Parasites	II	Total	Lectures	Practicals	Credits	0.5	1.0	I	II
		15	15	-	0.5			-	15

Name of the discipline:
“Biology of parasites”

Type of course according to uniform state requirements:
Elective course

Level of study:
Master’s degree

Forms of teaching:
Lectures

Year of study:
1st year

Duration of the course:
One semester

Schedule:
15 hours of lectures

Teaching aids:
Multimedia presentations, discussions
Links and references to Internet resources and current scientific articles

Methods for stimulating students' creative activity
Participation in discussions
Writing and presenting scientific essays and reviews

Forms of assessment:
Test in an electronic environment

Formation of the final grade:
The final grade is formed according to the results obtained in the test

Leading lecturer:
Habilitation and non-habilitation lecturers from the Department of Medical Biology.

ANNOTATION

The discipline "Biology of Parasites" provides an opportunity to acquire knowledge on basic issues related to the morphological features of the most medically significant parasites, their biological significance, distribution, life cycle, stages of development, invasive and pathogenic forms, parasitoses they cause, basic diagnostic methods and methods for prevention.

MAIN AIMS OF THE CURRICULUM

Acquisition of knowledge and skills for recognition and characterization of the most medically relevant parasites, including:

- morphology and biological cycle
- invasive and pathogenic forms
- modes of infection
- caused parasitosis
- localization and pathogenic mechanism
- general knowledge of the clinical picture and diagnostic methods
- prophylaxis

EXPECTED OUTCOMES

Upon completion of the course, students should have the following knowledge and skills:

- recognize microscopically and macroscopically the most important parasites and their forms
- characterize their biological cycles and morphological forms
- distinguish between invasive and pathogenic forms
- indicate ways of infection and impact on the human body
- have general knowledge about the course of the caused parasitosis
- are familiar with laboratory methods for identifying parasites or their forms
- know modern prophylactic methods

LECTURES

1st year students, II semester

№	TOPIC	HOURS
1.	Introduction to parasitology. Parasites and parasitism - terminology. Parasitic invasion and disease. Spread of parasitosis.	3
2.	Subkingdom Protozoa. Amoebas. Ciliates. Flagellates.	2
3.	Subkingdom Protozoa. Phylum Apicomplexa.	2
4.	Flatworms. Liver and blood flukes.	2
5.	Flatworms. Tapeworms.	2
6.	Roundworms.	2
7.	Arthropods as vectors for transmissible diseases.	2
	TOTAL	15 hours

RECOMMENDED LITERATURE

- Manual in Parasitology, Basic clinical parasitology – Harold W. Brown, Franklin A. Neva. 6th edition. McGraw-Hill Education - Europe, ISBN: 9780838506240.
- M.D. Paniker, C. K. Jayaram (Author), M.D. Ghosh, Sougata. Paniker's Textbook of Medical Parasitology. ISBN-10: 9350905345; ISBN-13: 978-9350905340.

SYLLABUS

1. Parasitism as a biological phenomenon. Parasites and hosts. Origin of parasitism. Adaptation of the parasite to the host.
2. Relationships between the parasite and the host. Ecology of parasitism.
3. Subkingdom Protozoa. Genus *Entamoeba* – *Entamoeba histolytica*, *Entamoeba coli*, *Entamoeba gingivalis*.
4. Flagellates. Genus *Trypanosoma* – *Trypanosoma gambiense*, *Trypanosoma rhodesiense*, *Trypanosoma cruzi*. Genus *Leishmania* – *Leishmania donovani*, *Leishmania tropica*.

5. Flagellates. Genus *Trichomonas* – *Trichomonas hominis*, *Trichomonas tenax*, *Trichomonas vaginalis*. Genus *Giardia* - *Giardia lamblia*.
6. Phylum Apicomplexa. Genus *Plasmodium*. *Plasmodium* spp. – morphological characteristics and features of life cycles.
7. Phylum Apicomplexa. Genus *Toxoplasma* – *Toxoplasma gondii*.
8. Ciliates. Genus *Balantidium* – *Balantidium coli*.
9. Flatworms. Morphology of butterflies. Liver flukes – *Fasciola hepatica*. *Dicrocoelium dendriticum*. *Opisthorchis felinus*.
10. Flatworms. Blood flukes – *Schistosoma haematobium*. *Schistosoma japonicum*, *Schistosoma mansoni*.
11. Flatworms. Morphology of tapeworms. *Diphyllobothrium latum*, *Taenia solium*. *Taenia saginata*, *Echinococcus granulosus*, *Hymenolepis nana*.
12. Roundworms. Morphology of roundworms. *Ascaris lumbricoides*. *Enterobius vermicularis*. *Trichuris trichiura*. *Trichinella spiralis*, *Strongyloides stercoralis*. *Ancylostoma duodenale*, *Wuchereria bancrofti*.
13. Phylum Arthropoda - morphology and medical significance. Ticks and insects as vectors and ectoparasites.