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MINISTRY OF SCIENCE AND HIGHER EDUCATION

RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

NORTH-CAUCASUS FEDERAL UNIVERSITY

APPROVED

Assoc. Prof. Kubanov S.I.

PhD in Medical Sciences

Dean Faculty of Medicine and Biology

COURSE OUTLINE OF THE DISCIPLINE (MODULE)

BIOLOGY: PARASITOLOGY

- Specialty: 31.05.01 General Medicine
- Mode of training: Full-time
- Year of commencement of studies: 2026
- Delivered in Semester 3

Developed by:

Associate Professor of the Department of Zoology and Parasitology

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1. Aim and Objectives of Mastering the Discipline (Module)

The purpose of the discipline "Zoology: Parasitology" is to form the appropriate set of universal and general professional competencies in students of the specialty 31.05.01 Medical Care.

The objectives of the discipline are to:

- ensure the assimilation of the basic theoretical principles of parasitology, including both classical approaches to the development of parasitology and the main current achievements of biological science;
- form a responsible attitude towards the prevention of parasitic diseases based on knowledge about parasites;
- develop the ability for creativity, including research work, and foster a need for independent acquisition of knowledge.

2. Place of the Discipline (Module) in the Structure of the Training (educational) Program

The discipline "Biology: Parasitology" is a mandatory part of the curriculum.

3. List of Potential Learning Outcomes for the Discipline (Module), Correlated with the Outcomes of Mastering the Educational Program

Code and definition of the competence	Code and definition of the indicator	Planned learning outcomes for the discipline (module) describing the stages of competency and indicator development
OPC-5 Is able to assess morphofunctional, physiological conditions, and pathological processes in the human body in order to solve professional tasks	ID-1 OPC-5 Estimates morphofunctional physiological conditions and processes in the human body at the group and population levels to solve professional tasks ID-2 OPC-5 Identifies pathological conditions and processes in the human body of professional tasks	Proficiency in parasitological examination methods and techniques for compiling parasitological descriptions, and the ability to use this knowledge to solve theoretical and practical problems in modern parasitology

4. Volume of the Academic Discipline (Module) and Control *

Volume of classes: Total: _____ ECTS credits, ____ academic hours.	Full-time type of study, in academic hours
Face-to-face work	54
Lectures / including practical training	18
Laboratory works / including practical training	36
Independent work	18
Forms of control	
Examination	36

5. Content of the Discipline (Module), Structured by Topics (Sections) with an Indication of the Hours and Types of Classes

#	Section (topic) of the discipline and brief content	Competenci es and indicators to be developed	Full-time training				Forms of current control of academic progress
			Contact work of students with the teacher / of them practical skills training, hours			Independent work, hours	
			Lectures	Practical classes	Laboratory work		
1	Introduction. Parasitic sarcocystis. 1. Medical protistology. 2. The most important parasites and causative agents of human parasitic diseases. 3. The focal nature of vector-borne diseases - the doctrine of E.N. Pavlovsky. 4. Methods of diagnosing diseases caused by pathogenic protists.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
2	Apicomplexes 1. Biological basis of prevention of protozoal diseases. 2. Symptoms, etiology, pathogenesis, clinic, diagnostics.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
3	Trematodes Medical helminthology. 1. Features of the life cycles of trematodes. 2. Ways of human infection with fascioliasis, paragonimiasis, clonorchiasis, opisthorchiasis, dicrocoeliasis, schistosomiasis, etc. 3. Pathogenic effect of helminths on the human body. 4. Prevention.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving

4	Cestodes 1. Features of the life cycles of cestodes- typology of larvocysts. 2. Ways of invasion by pseudo- and cyclophyllides. 3. Preventive measures and methods of treatment of cestodoses, cysticercoses, cenuroses, and echinococcoses.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
5	Parasitic Nematodes 1. Features of the life cycles of nematodes of different systematic groups. 2. Diagnostic stages and symptoms of nematodoses. 3. Treatment methods for helminthiasis	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
6	Parasitic insects with incomplete metamorphosis 1. Medical arachnoentomoparasi tology. 2. Ectoparasites - dermaphages, hemotrophs, histiotrophs - as transmitters of infections and invasions.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
7	Parasitic insects with complete metamorphosis 1. Examples of obligate temporary parasites among arthropods. 2. Parasitic insects: fleas, bugs, and dipterans.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving

8	Acariform mites. 1. Scabies is a disease caused by <i>Sarcoptes scabiei scabiei</i> . Preventive measures, diagnostic methods, and treatment. 2. The topical separation of the parasites <i>Demodex brevis</i> and <i>D.foliculorum</i> , which cause demodic dermatitis in humans. 3. Red-bodied mites are the cause of thrombidiosis (autumn erythema). Life cycle. Symptoms and prevention.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
9	Parasitiform mites 1. Acariasis - ixodid mites as a vector for the tick-borne encephalitis virus. 2. Features of morphology, biology. Prevention of acariasis.	ID-1 OPC-5 ID-2 OPC-5	2		4	2	Survey, situational problem solving
	Total for 3 semesters		18		36	18	
	Total		18		36	54	

6. Assessment Tools Fund for the Discipline (Module)

The assessment tools fund (ATF) for the discipline (module) "Biology: Parasitology" is based on the list of competencies to be mastered, indicating the stages of their formation in the process of mastering the discipline (module). The ATF provides an objective control over the achievement of the planned learning outcomes. The ATF includes:

- A description of indicators and criteria for evaluating competencies at various stages of their formation, a description of evaluation scales;
- Methodological materials determining the procedures for evaluating knowledge, skills, abilities and (or) work experience characterizing the stages of competency formation;
- Standard control tasks and other materials necessary for assessing knowledge, skills, and the level of mastery of the formed competencies in the process of mastering the discipline (module).

The ATF is an appendix to this discipline (module) program.

7. Methodological Guidelines for Students on Mastering the Discipline

When starting work, each student must take into account the following provisions.

The discipline (module) is structured on a thematic principle; each topic represents a logically completed section.

The lecture material is dedicated to the consideration of key, basic provisions of the courses and the clarification of learning tasks assigned for the independent work of students.

Practical classes are conducted with the aim of consolidating the mastered information, acquiring skills for its application in solving practical problems in the relevant subject area.

Laboratory works are aimed at gaining practical experience in the relevant subject area. The independent work of students is aimed at the independent study of additional material, preparation for practical and laboratory classes, as well as the execution of all types of independent work.

In order to successfully master the discipline, it is important to complete all types of independent work employing the recommended sources of information.

8. Educational, Methodological, and Informational Support for the Discipline

8.1. The list of basic and additional literature required for mastering the discipline (module)

8.1.1. The list of basic literature:

1. Parasitology: textbook / T. V. Viktorova, S. M. Izmailova, G. F. Koritina [et al.]; edited by T. V. Viktorova. – Ufa: Bashkir State Medical University, 2020. – 146 p.
2. Abdukaeva N. S. Special questions of parasitology / N. S. Abdukaeva. – St. Petersburg: St. Petersburg State Pediatric Medical University, 2018. – 48 p.

8.1.2. List of additional literature:

1. Atlas of infectious diseases [Electronic resource] / Edited by V. I. Besteva, S. N. Zharova, V. V. Nikiforova – M. : GEOTAR-Media, 2014.

<http://www.studmedlib.ru/book/ISBN9785970428771.html>

2. Infectious diseases. Atlas [Electronic resource] : a guide / Uchaykin V.F., Kharlamova F.S., Shamsheva O.V., Polesco I.V. – Moscow : GEOTAR-Media, 2010.

<http://www.studmedlib.ru/book/ISBN9785970418109.html>

3. Infectious diseases [Electronic resource] : textbook / Alikeeva G. K. et al.; Edited by N. D. Yushchuk, Yu. Ya. Vengerov. – 2nd ed., reprint. And additional – M. : GEOTAR-Media, 2013.

<http://www.studmedlib.ru/book/ISBN9785970426715.html>

8.3. List of resources of the Internet information and telecommunication network required for the study of a discipline (module)

<http://animaly.ru/ohrana-zhiv.php> – wildlife and its protection

<http://parasitology.ru/> - parasitology (website about parasites)

<https://www.vniigis.ru/menu/partnery/parazitologicheskie-ssylki-so-vsego-mira/> - All-Russian Research Institute of Fundamental and Applied Parasitology of Animals and Plants - a branch of the Federal State Budgetary Scientific Institution "Federal Scientific Center - All-Russian Research Institute of Experimental Veterinary Medicine named after K.I. Skryabin and Ya.R. Kovalenko of the Russian Academy of Sciences"

<https://www.zin.ru/journals/parazitologiya/> - Parasitology journal

<http://medparasitology.com/> - Medical Parasitology and Parasitic Diseases

<https://vniigis.elpub.ru/jour> - Russian Parasitological Journal

9. List of Information Technologies Employed through the Discipline (Module), Including a List of Software and Information Reference Systems

When delivering lectures, computer equipment and demonstrations of multimedia presentation materials are used. In seminars and practical classes, students deliver presentations prepared by them during the hours of independent work.

Information Reference Systems:

Information-reference and information-legal systems used in the study of the discipline:

1.	University Library Online electronic library system - www.biblioclub.ru (Contract No. 50-04/19 for the provision of information services dated 13.05.2019)
2.	IPRbooks electronic library system (LICENSE AGREEMENT No. 5168/19 dated 13.05.2019 for providing access to the IPRbooks electronic library system. Organization: IPR Media LLC)
3	"eLIBRARY.RU": [Scientific Electronic Library]. – URL: http://elibrary.ru
4	Information and Legal Portal "Garant" - http://www.garant.ru/

5	Reference and Legal System Russian Legislation and Judicial Practice in Free Access - http://www.pravo.ru/
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Software:

1.	Alt Workstation 10
2.	Alt Workstation K
3.	Alt Server
4.	Office software package – P7-Office

10. Description of the Material and Technical Resources Required for the Educational Process for the Discipline (Module)

Lecture classes	A classroom equipped with multimedia equipment and technical training facilities.
Laboratory classes	
Practical classes	A classroom, equipped with multimedia equipment and technical training facilities.
Independent work	A room for the independent work of students, equipped with computer hardware with the capability to connect to the Internet network and provide access to the electronic information and educational environment of the university.
Practical training	Carried out in the structural subdivisions of the university and (or) in organizations engaged in activities matching the profile of the respective training program, including its structural subdivision.

11. Specific Features of Mastering the Discipline (Module) by Persons with Disabilities

Students with disabilities shall be provided with special textbooks, teaching aids, and didactic materials, special technical training facilities for collective and individual use, the services of an assistant (helper) providing the necessary technical assistance to the students, as well as the services of sign language interpreters and tactile sign language interpreters.

The mastery of the discipline (module) by students with disabilities may be organized jointly with other students, as well as in separate groups.

Mastering the discipline (module) by students with disabilities is to be carried out taking into account the peculiarities of psychophysical development, individual capabilities, and health status.

In order to ensure the accessibility of higher education under the educational program for persons with disabilities, the following is provided during the mastery of the discipline (module):

- 1) for persons with visual impairments:
 - the presence of an assistant offering the student the necessary technical assistance, taking into account individual features (help taking the workplace, moving around, reading and formatting the task, including writing under dictation),
 - written tasks, as well as instructions on the procedure for their execution, are formatted in an enlarged font,
 - special textbooks, teaching aids, and didactic materials (having a large font or audio files), individual uniform lighting of at least 300 lux,
 if necessary, a magnifying device is provided to the student to complete the task;
- 2) for persons with hearing impairments:
 - the presence of an assistant providing the student with the necessary technical assistance, taking into account individual characteristics (helps to take a workplace, move around, read and format the task, including writing with dictation),

- the availability of sound-amplifying equipment for collective use is ensured; if necessary, sound-amplifying equipment for individual use is provided to the student;
 - provision with proper sound means of reproducing information is ensured;
- 3) for persons with musculoskeletal disorders (including severe motor function impairments of the upper limbs or the absence of upper limbs):
- written tasks are performed on a computer with specialized software or are dictated to an assistant;
 - at the request of the student, tasks may be performed verbally.

12. Specific Features of Implementing the Discipline with the Use of Distance Learning Technologies and E-Learning

Subject to Part 1 of Article 16 of the Federal Law of December 29, 2012, No. 273-FZ On Education in the Russian Federation, e-learning shall be viewed as the arrangement of educational activities employing information contained in databases and used in the implementation of educational programs, as well as information technologies, technical means, and information and telecommunication networks that ensure the processing and transmission of the specified information via communication lines, and the interaction of students and pedagogical workers.

Remote (distance) learning technologies are understood as educational technologies implemented mainly with the use of information and telecommunication networks during the indirect (at a distance) interaction of students and pedagogical workers.

The implementation of the discipline may be carried out with distance learning technologies and e-learning in full or in part. The components of the Educational And Methodological Complex (EMC) of the discipline (working program of the discipline, assessment and methodological materials, forms of attestation) implemented with the use of distance learning technologies and e-learning contain an indication of their use.

When arranging educational activities with distance learning technologies and e-learning, asynchronous and synchronous methods of interaction between participants in educational relations via the information and telecommunications network Internet may be offered.

When using distance learning technologies and e-learning, the schedule for the discipline shall indicate: methods of interaction among participants in educational relations via the information and telecommunications network Internet (VCC – videoconferencing, ET – electronic testing); links to the electronic information and educational environment of NCFU, to educational platforms and resources of other organizations to which open access is provided via the information and telecommunications network Internet; for synchronous learning – the time of online classes and instructors; for asynchronous learning – the authors of online courses.

When arranging intermediate attestation with distance learning technologies and e-learning, the Methodological Recommendations on the use of technical means ensuring the objective reliability of results when conducting intermediate and state final attestation for higher education educational programs – Bachelor's Degree programs, Specialist's Degree programs, and Master's Degree programs with distance learning technologies are used (Letter of the Ministry of Science and Higher Education of Russia dated December 7, 2020, # MN-19/1573-AN On sending methodological recommendations).

The implementation of the discipline with the use of e-learning and distance learning technologies is carried out using the electronic information and educational environment of NCFU, to which students are provided access via the information and telecommunications network Internet, or using the resources of other organizations, including platforms providing services for videoconferencing, online meetings, and distance learning (MTS-Link), as well as using the capabilities of social networks to carry out communication between students and instructors.

The educational and methodological support for a discipline shall be ensured with e-learning and distance learning technologies includes the working program presented in electronic form, educational and methodological manuals or a course of lectures, methodological guidelines

for performing various types of educational activities of students provided for by the discipline, and other educational and methodological materials posted in the information and educational environment of NCFU.