Thematic plan of seminar-type classes
in discipline «Biology»
for students of 2025 year of admission
under the educational programme
31.05.01 General Medicine,
specialisation General Medicine
(Specialist's),
form of study full-time
for the 2025-2026 academic year

№	Thematic blocks	Practical training within the framework of thematic block [3]	Hours (academic) [4]
	1 semester		
1.	Structure and function of genetic material[1]. Multilevel organization of the genome. Structure, types and functions DNA. DNA replication.[2]	-	2
2.	Gene expression during protein biosynthesis.[1] Transcription. Processing and splicing. Genetic code. Translation.[2]	PP	2
3.	Regulation of gene activity.[1] Operon model. Multilevel regulation of gene activity in eukaryotes.[2]	-	2
4.	Prokaryotes and eukaryotes. Modern methods of microscopy. Light microscopy.	PP	2
5.	Cell cycle. Mitotic cycle[1]. Regulation of the cell cycle. Medical aspects.[2]	PP	2
6.	Reproduction of organisms[1]. Asexual and sexual reproduction. Gametogenesis. Meiosis. Parthenogenesis. Gynogenesis. Androgenesis.[2]	PP	2
7.	Ontogenesis.[1] General patterns of the embryonic period of animals and humans. Critical periods.[2]	PP	2
8.	Postembryonic period of human ontogenesis.[1] Growth. Aging. Theories of aging.[2]	-	2
9.	Basic patterns of inheritance.[1] Interaction of allelic and nonallelic genes.[2]	PP	2
10.	Genetics of sex.[1] Chromosomal determination of sex. Inheritance of sex-linked traits.[2] Linked inheritance.[1] Chromosomal theory of heredity.[2]	PP	2
11.	Variability[1]. Recombination. Modifications. Mutational variability. Spontaneous and induced mutagenesis.[2]	PP	2
12.	Reparation of genetic material.[1] Genome editing.[2]	PP	2
13.	Fundamentals of medical genetics.[1] Methods of genetic research. Cytogenetic, molecular cytogenetic methods. Medical genetic counseling. Prenatal diagnostics.[2]	PP	2

14.	Testing knowledge and skills on the topics: “Molecular-genetic, cellular and organismic levels of life organization.”[1]	PP	2
2 semestr			
15.	Patterns and mechanisms of biological evolution.[1] The concept of micro- and macroevolution. The concept of population genetics. Characteristics of human populations. The action of elementary evolutionary factors in human populations. Population-statistical method.[2]	PP	4
16.	Medical and biological aspects of ecology. [1]	-	4
17.	Subject of human ecology.[1]	-	4
18.	Medical-biological and ecological bases of parasitism.[1]	-	4
19.	Organization and biology of Protozoa.[1] Representatives of the Sarcomastigophora and Apicomplexa types pathogenic for humans.[2]	PP	4
20.	Organization and biology of Flatworms.[1] Flukes. Medical significance.[2]	PP	4
21.	Organization and biology of Flatworms.[1] Tapeworms. Medical importance.[2]	PP	4
22.	Organization and biology of Roundworms.[1] Geohelminths. Medical importance.[2]	PP	4
23.	Organization and biology of Roundworms.[1] Biohelminths. Medical importance.[2]	PP	4
24.	Organization and biology of Arthropods.[1] Arachnids (scorpions, spiders, ticks). Medical importance.[2]	PP	4
25.	Organization and biology of Arthropods [1] Insects (lice, fleas, mosquitoes, flies, midges, gadflies, horseflies). Medical significance. [2]	PP	4
26.	Methods of parasitological analysis.[1]	PP	4
27.	Control of knowledge and skills on the topic: "Fundamentals of medical parasitology. Medical protozoology. Medical helminthology. Medical arachnoentomology".[1]	PP	4
28.	Modern concepts of the biosphere.[1] Structure and functions of the biosphere. Evolution of the biosphere. The doctrine of the noosphere.[2]		4
		Total	84

[1] – topic
[2] – essential content
[3] - practice
[4] – one thematic block includes several classes, the duration of one class is 45 minutes, with a break between classes of at least 5 minutes

Considered at the Biology department meeting, protocol of «20» May 2025 г. № 17

Head of the Department G.L. Snigur