



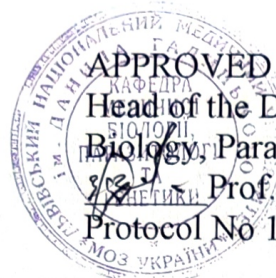
Head of the Department of Medical
Biology, Parasitology and Genetics
Prof. Zinovy VOROBETS
Protocol No 1 from 30.08.2023

**THEMATIC AND CALENDAR SCHEDULE OF LECTURES OF THE STUDYING
DISCIPLINE «MEDICAL BIOLOGY, PARASITOLOGY AND GENETICS» FOR THE I
YEAR STUDENTS
SPECIALTY 222 MEDICINE
IN THE 2023-2024 ACADEMIC YEAR**

| No | Topic | Hours | Date | Lecturer |
|-----------------------------|---|-------|-------------|---|
| I SEMESTER | | | | |
| 1. | Introduction to Medical Biology Course. Peculiarities of human life safety during the war. Structural and functional organization of a cell. | 2 | 1.09-14.09 | Paryzhak S.Ya. – Ph.D., Associate Professor; Onufrovych O.K. – Ph.D., Associate Professor |
| 2. | Molecular basis of heredity. Realization of hereditary information. Reproduction on a cellular level. Novel coronavirus SARS-CoV-2: structure, methods of diagnostics and prophylaxis of coronavirus disease. | 2 | 15.09-28.09 | |
| 3. | Molecular and genetic mechanisms of ontogenesis. Breaks of the ontogeny and their place in human pathology. Provision of emergency medical and psychological assistance during wartime. | 2 | 29.09-12.10 | |
| 4. | Organismic level of the genetic information organization. Gene interactions. Chromosomal theory of heredity. Genetics of sex. | 2 | 13.10-26.10 | |
| Total for the I semester | | 8 h | | |
| II SEMESTER | | | | |
| 5. | Variation in human as life property and genetic phenomenon. Methods of human inheritance investigation. Hereditary diseases of human. | 2 | | Paryzhak S.Ya. – Ph.D., Associate Professor; Onufrovych O.K. – Ph.D., Associate Professor |
| 6. | The medical and biological basis of parasitism. Protozoa are human parasites. | 2 | | |
| 7. | Medical Helminthology. Flat and Round worms are human parasites. | 2 | | |
| 8. | Medical Arachnoentomology. Arthropods as the causative agents and vectors of human infections and invasions. | 2 | | |
| Total for the II semester | | 8 h | | |
| Total for the academic year | | 16 h | | |

Head teacher of the Department
of Medical Biology, Parasitology and Genetics

Assoc. Prof. Oksana PERSHYN




APPROVED

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Protocol No 1 from 30.08.2023

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STUDYING DISCIPLINE «MEDICAL BIOLOGY, PARASITOLOGY AND
GENETICS» FOR THE I YEAR STUDENTS
SPECIALTY 222 MEDICINE
IN THE 2023-2024 ACADEMIC YEAR**

I SEMESTER

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| 3. | Molecular and genetic mechanisms of ontogenesis. Breaks of the ontogeny and their place in human pathology. | 2 | 29.09-12.10 | |
| 4. | Organismic level of the genetic information organization. Gene interactions. Chromosomal theory of heredity. Genetics of sex. | 2 | 13.10-26.10 | |
| Total for the I semester | | | 8 h | |

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**THEMATIC AND CALENDAR SCHEDULE OF PRACTICAL CLASSES OF THE
STUDYING DISCIPLINE «MEDICAL BIOLOGY, PARASITOLOGY AND
GENETICS» FOR THE I YEAR STUDENTS
SPECIALTY 222 MEDICINE
IN THE 2023-2024 ACADEMIC YEAR**

I SEMESTER

| No | Topic | Hours | Date |
|-----------------------------|---|-------------|-------------|
| 1 | Levels of living matter organization. Optical systems in biological investigations. Cell membranes. Transport of substances across the plasmalemma. | 2 | 1.09-7.09 |
| 2 | Cell morphology. Structural components of cytoplasm. | 2 | 8.09-14.09 |
| 3 | Chromosomes morphology. Human karyotype. | 2 | 15.09-21.09 |
| 4 | Characteristic of nucleic acids. The organization of the information flow in cell. | 2 | 22.09-28.09 |
| 5 | Genes structure in pro- and eukaryotes. Structural and regulatory genes. Processes of genetic information realization. The genome structure of the human immunodeficiency virus. Genome organization of coronavirus SARS-CoV-2. | 2 | 29.09-5.10 |
| 6 | Reproduction – the basic property of living matter. Cell cycle. Mitosis. | 2 | 6.10-12.10 |
| 7 | Biological features of human reproduction. Meiosis. Gametogenesis. Fertilization. | 2 | 13.10-19.10 |
| 8 | Peculiarities of human genetics. Basic patterns of human Mendelian traits inheritance. Properties of the gene. | 2 | 20.10-26.10 |
| 9 | Practical skills for Part «Cell biology. Reproduction». | 2 | 27.10-2.11 |
| 10 | Peculiarities of human genetics. Basic patterns of human mendelian traits inheritance. Properties of the gene. | 2 | 3.11-9.11 |
| 11 | Allelic gene interactions. Inheritance of blood groups according to the AB0 and rhesus factor systems. | | 10.11-16.11 |
| 12 | Non-allelic gene interactions. | 2 | 17.11-23.11 |
| 13 | Linkage inheritance. Genetics of sex. Sex-linked inheritance. | 2 | 24.11-30.11 |
| 14 | Chromosomal theory of heredity. Linkage of genes. Crossing-over. | 2 | 1.12-7.12 |
| 15 | Variability of organisms, its forms. Phenotypic and genotypic variation. | 2 | 8.12-14.12 |
| Total for I Semester | | 30 h | |

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II SEMESTER

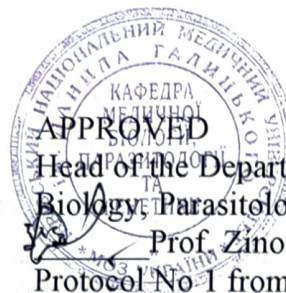
| No | Topic | Hours | Date |
|----|---|-------------|------|
| 16 | The basic principles of medical genetics. Gene and chromosomal diseases. Cytogenetics and biochemical methods of human inheritance investigation. | 2 | |
| 17 | Genealogy of human as the method of human inheritance investigation. Study of twins. | 2 | |
| 18 | Study of heredity by the method of dermatoglyphics. Population statistic method of heredity study. | 2 | |
| 19 | Practical skills for the Part "Basic principles of heredity and variation. Methods of the human inheritance investigation". | 2 | |
| 20 | Medical Protozoology. Phylum Sarcomastigophorea, Class Lobosea. Phylum Ciliophora. Class Rimostomatea. | 2 | |
| 21 | Representatives of the Class Zoomastigophorea – human parasites. | 2 | |
| 22 | Phylum Apicomplexa. Representatives of the Class Sporozoa – human parasites. | 2 | |
| 23 | Medical Helminthology. Phylum Flat worms (Platyhelminthes). Class Trematoda: liver, lancet, cat and lung flukes. | 2 | |
| 24 | Class Trematoda: blood flukes, causative agents of metagonimus and nanophyetus. | 2 | |
| 25 | Class Cestoidea: unarmed, armed and dwarf tapeworms. | 2 | |
| 26 | Class Cestoidea: echinococcus, alveococcus, broad tapeworm. | 2 | |
| 27 | Phylum Round worms (Nemathelminthes). Class Nematoda: large intestinal roundworm, pinworm (seatworm), whipworm and trichina worm. | 2 | |
| 28 | Phylum Round worms (Nemathelminthes). Class Nematoda: threadworm, hookworm, Guinea worm and Filariae. | 2 | |
| 29 | Practical skills for the Parts "Medical Protozoology" and "Medical Helminthology". | 2 | |
| 30 | Phylum Arthropoda. Class Arachnoidea. Ticks and mites are activators and vectors of human diseases. | 2 | |
| 31 | Class Insecta: diptera, lice and fleas – vectors and causative agents of human infections and invasions. | 2 | |
| 32 | Biosphere as a system, supporting the existence of human beings. Human ecology. | 2 | |
| | Total for II Semester | 34 h | |
| | Total for the Academic year | 64 h | |

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**THEMATIC AND CALENDAR SCHEDULE OF INDIVIDUAL WORK OF THE
STUDYING DISCIPLINE «MEDICAL BIOLOGY, PARASITOLOGY AND
GENETICS» FOR THE I YEAR STUDENTS
SPECIALTY 222 MEDICINE
IN THE 2023-2024 ACADEMIC YEAR**

| No | Topic | Hours | Group No | Date |
|----|---|-------------|----------|-------------|
| 1 | Organization for matter and energy flow in a cell. | 4 | 34 | 1.09-14.09 |
| 2 | Structure of human immunodeficiency virus and coronavirus SARS-CoV-2 genomes. Realization of hereditary information in viruses. | 6 | 34 | 15.09-28.09 |
| 3 | Methods of diagnosis and prophylaxis of coronavirus disease. | 5 | 34 | 29.09-12.10 |
| 4 | Influence of biological teratogenic factors on the prenatal period of human ontogenesis. | 5 | 34 | 13.10-26.10 |
| 5 | Ageing as final stage of human ontogenesis. Theories of ageing. | 5 | 34 | 27.10-9.11 |
| 6 | Regeneration and its types: physiological and reparative. The importance of the regeneration system for homeostasis. | 5 | 34 | 10.11-23.11 |
| 7 | The life of cells outside the organism. Cell cloning. | 4 | 34 | 24.11-7.12 |
| 8 | Genetic engineering. Biotechnology. Concept about gene therapy. | 4 | 34 | 8.12-20.12 |
| | Total for I Semester | 37 h | | |
| 9 | Genetic maps. Methods of the human chromosomes mapping. The modern state of human genome investigation. | 4 | 34 | |
| 10 | Transplantation and immunity. Achievements of transplantology. | 5 | 34 | |
| 11 | Methods of laboratory diagnosis of protozoan diseases. | 5 | 34 | |
| 12 | Methods of laboratory diagnosis of helminthiasis. | 5 | 34 | |
| 13 | Poisonous plants and animals for human. | 4 | 34 | |
| 14 | Midges and its components: characteristic, importance as the intermediate hosts of helminthes and vectors of human diseases. | 4 | 34 | |
| 15 | Cockroaches and bedbugs: their species, medical importance. | 4 | 34 | |

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|----|---|-------------|----|--|
| 16 | Phylogenesis of urogenital systems of Vertebrates. Onto-phylogenetic causes of congenital defects. | 4 | 34 | |
| 17 | Phylogenesis of circulatory systems of Vertebrates. Onto-phylogenetic causes of congenital defects. | 4 | 34 | |
| 18 | Origin of human. Human races as the reflection of the adaptive patterns of human development. | 4 | 34 | |
| 19 | Synthetic theory of evolution. Population structure of humankind. | 4 | 34 | |
| | Total for II Semester | 48 h | | |
| | Total | 85 h | | |

Total hours/credit 165/5.5

Lectures 16 hours

Practices 64 hours;

Individual work 85 hours.

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