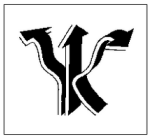


**Private Joint-Stock Company**
**"Higher Educational Institution**
**"Interregional Academy of Personnel Management"**
(name of educational unit)

Approved:
Name of the department
Minute No. _ dated "_" _____ 2025

Head of the department
_____
(signature)
(full name)

# SYLLABUS
## of the academic discipline
## "FUNDAMENTALS OF BIOLOGY, HUMAN GENETICS AND ANTHROPOLOGY"

Specialty: C4 Psychology

Educational level: first (bachelor's) level

Study program: "Psychology"

Specialization: _____

2025

## General information about the academic discipline

| | |
|---|---|
| Name of the academic discipline | Fundamentals of Biology, Human Genetics and Anthropology |
| Code and name of the specialty | C4 Psychology |
| Level of higher education | first (bachelor's) level of higher education |
| Status of the discipline | compulsory |
| Number of credits and hours | 4 credits / 120 hours<br>Lectures: 20<br>Seminars: 32 |
| Language of instruction | Ukrainian |
| Type of final control | Exam |

## General information about the instructor. Contact information.

| | |
|---|---|
| Full name of the instructor | |
| Academic degree | |
| Position | |
| Areas of scientific research | |
| Links to the registers of identifiers for scientists | |
| Contact information | |
| E-mail: | |
| Department phone | |
| Instructor’s portfolio on the website | |

**Course abstract**. The academic discipline "Fundamentals of Biology, Human Genetics and Anthropology" studies fundamental biological processes at the level of cells, substances and populations, the principles of functioning of the genetic apparatus, modern achievements of molecular biology and medical genetics. Considerable attention is paid to the study of the genetic foundations of human health and disease, the role of genetic factors and environmental factors.

The anthropological block of the discipline covers the issues of the origin of

man, his development and diversity, biological and social factors of development, the relationship between biological and cultural

**The subject** of study of the academic discipline is: biological foundations of human life, laws of heredity and variability, mechanisms of preservation and implementation of genetic information, as well as anthropological features of the origin, development and diversity of human society.

**The purpose** of the course is to provide students with systematic knowledge of the biological foundations of human life, genetic mechanisms of heredity and variability, as well as anthropological aspects of the origin and evolution of human society for further study of medical, psychological and social sciences. as well as understanding of modern problems in the field of bioethics and biotechnology.

**Objectives** of the academic discipline: study by students of the basic fundamental biological laws and processes at the cellular level and the human body; study of the structural and functional organization of hereditary material and the patterns of its manifestations; formation of knowledge about the gene and genetic features of the human body; consider the mechanisms of heredity, genetic diseases, principles of genetic engineering and biotechnology, as well as the role of DNA in hereditary processes; development of the ability to obtain biological and genetic knowledge for the analysis of psychophysiological processes; study the evolutionary history of man, the stages of the formation of modern humanity, the concept of race and its biological and social aspects; disclosure of anthropogenesis, racial diversity and biosocial features of development.

**Prerequisites of the academic discipline**. The study of the academic discipline "Fundamentals of Biology, Human Genetics and Anthropology" is based on the knowledge and skills acquired by students in the study of subjects of complete general secondary education.

Postrequisites of the academic discipline. The knowledge and skills acquired by students in the process of studying the academic discipline "Fundamentals of Biology, Human Genetics and Anthropology" contribute to the successful study by higher education students of a number of other academic disciplines aimed at the formation of professional knowledge and skills: "Anatomy of the Central Nervous System and Physiology of Higher Nervous Activity", "Psychophysiology of Professional Activity", "Practical Course in General Psychology", "Age Psychology and Pedagogy".

The academic discipline ensures the formation of general and special competencies by students and the acquisition of learning outcomes defined by the educational and professional program "Psychology", namely:

**Program competencies**

| | |
|---|---|
| General | GC11. The ability to preserve and multiply moral, |

| | |
|---|---|
| Competencies | cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle. |
| Specific Competencies | GC1. The ability to operate with the categorical and conceptual apparatus of psychology |
| Learning Outcomes | PLO2. Understand the patterns and features of the development and functioning of mental phenomena in the context of professional tasks.<br>PLO15. Be responsible for professional self-improvement, training and self-development.<br>PLO18. Take effective measures to preserve health (one's own and those around them) and, if necessary, determine the content of a request for supervision.<br>PLO20. Present and justify determinism and hypotheses regarding the emergence and development of socio-psychological phenomena. |

**Content of the academic discipline (full-time study)**

| **№** | **Topic name** | **Number of hours, of which:** | | | |
|---|---|---|---|---|---|
| | | **Lectures** | **Practical classes** | **Independent work** | **Teaching methods/assessment methods** |
| **1st semester**<br>**Content module 1. Fundamentals of human biology** | | | | | **Teaching methods**: verbal (teaching lecture; conversation; educational discussion); inductive method; deductive method; analytical; synthetic; practical; |
| Topic 1. | Introduction. Cell theory. Structure and functions of cells. | 2 | 2 | 6 | |
| Topic 2. | Fundamentals of metabolism and energy. | 2 | 4 | 6 | |
| Topic 3. | Organization of a multicellular organism. Organ systems. | 2 | 4 | 8 | |
| **Content module 2. Human genetics** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Topic 4. | Fundamentals of molecular genetics: DNA and RNA structure, replication, transcription, translation. | 2 | 4 | 8 | explanatory-illustrative; reproductive; discussions, debates, dialogue, synthesis of thoughts; brainstorming; skills development; processing of discussion questions); innovative teaching methods (competence; project-research). **Assessment methods**: oral control (oral survey, assessment of participation in discussions); written control (control, independent work, essays); test control (closed-form tests: test-alternative, test-correspondence); method of self-control and self-assessment; evaluation of case studies. |
| Topic 5. | Chromosomal and gene variability | 2 | 4 | 6 | |
| Topic 6. | Medical genetics: hereditary diseases, genetic counseling. | 2 | 4 | 8 | |
| Topic 7. | Modern methods of genetic research. | 2 | 2 | 6 | |
| **Content module 3. Anthropology** | | | | | |
| Topic 8. | The origin of man: evolutionary concepts | 2 | 2 | 6 | |
| Topic 9. | Biological and morphological features of man. | 2 | 4 | 8 | |
| Topic 10. | Racial and ethnic types, their formation and interaction. | 2 | 2 | 6 | |
| Modular test work | | | | | |
| **Total :** | | **20** | **32** | **68** | |
| **Form of control: exam** | | | | | |

**Technical equipment and/or software** – official website of MAUP: http://maup.com.ua The educational process uses classrooms, a library, a multimedia projector and a computer for conducting lectures and seminars with

presentation elements. Studying individual topics and completing practical tasks requires access to information from the Internet, which is provided by a free Wi-Fi network.

**Forms and methods of control.**

Control of the success of students is divided into ongoing and final (semester).

Ongoing control is carried out during practical (seminar) classes, the purpose of which is to systematically check the understanding and assimilation of theoretical educational material, the ability to use theoretical knowledge when performing practical tasks, etc. The possibilities of ongoing control are extremely wide: motivation for learning, stimulation of educational and cognitive activity, a differentiated approach to learning, individualization of learning, etc.

Forms of student participation in the educational process that are subject to ongoing control:

-oral report;

- additions, questions to the person answering;

- systematic work in seminar classes, activity during the discussion of issues;

- participation in discussions, interactive forms of organizing classes;

- analysis of legislation and monographic literature;

- written tasks (tests, tests, creative works, essays, etc.);

- preparation of theses, summaries of educational or scientific texts;

- independent study of topics;

- Control of the success of students is divided into ongoing and final.

- **Methods of ongoing control:** oral control (survey, conversation, report, message, etc.); written control (test work, essay, presentation of material on a given topic in writing, etc.); combined control; presentation of independent work; observation as a control method; test control; problem situations.

**Grading system and requirements.**
**Table of distribution of points received by students**

| | **Ongoing knowledge control** | | | | | | | | | | **Modular test** | **Exam** | **Total score** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Topics | Topic 1 | Topic 2 | Topic 3 | Topic 4 | Topic 5 | Topic 6 | Topic 7 | Topic 8 | Topic 9 | Topic 10 | 20 | 40 | 100 |
| Work in a practical session | 4 | | 4 | | 4 | | 4 | | 4 | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Independent work | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | |

The table contains information about the maximum points for each type of academic work of a student.

When assessing the mastery of each topic for the current educational activity, the student is given marks taking into account the approved assessment criteria for the relevant discipline.

**The criteria for assessing** the learning outcomes of students and the distribution of points they receive are regulated by the Regulations on the assessment of academic achievements of students at PJSC "HEI "MAUP".

**Modular control.** Modular control work on the academic discipline "Academic Studies" is carried out in written form, in the form of testing, namely, closed-form tests: test-alternative, test-correspondence.

Criteria for evaluating the modular test work in the academic discipline "Academic Studies":

When evaluating the modular test work, the volume and correctness of the completed tasks are taken into account:

- the grade "excellent" (A) is given for the correct completion of all tasks (or more than 90% of all tasks);
- the grade "good" (B) is given for the completion of 80% of all tasks;
- the grade "good" (C) is given for the completion of 70% of all tasks;
- the grade "satisfactory" (D) is given if 60% of the proposed tasks are completed correctly;
- the grade "satisfactory" (E) is given if more than 50% of the proposed tasks are completed correctly;
- the grade "unsatisfactory" (FX) is given if less than 50% of the tasks are completed.

Absence from the modular test work - 0 points.

The above grades are transformed into rating points as follows:

"A" - 18-20 points;
"B" - 16-17 points;
"C" - 14-15 points;
"D" - 12-13 points.
"E" - 10-11 points;
"FX" - less than 10 points.

The final semester control in the academic discipline «Fundamentals of Biology, Human Genetics and Anthropology» is a mandatory form of assessing the learning outcomes of a student. It is carried out within the time limits established by the educational process schedule and in the volume of educational material determined by the syllabus of the academic discipline.

The final control is carried out in the form of an exam. The student is admitted to the final control provided that he/she performed all types of work outlined in the sullabus.

The final (semester) grade of the discipline for which the exam is provided is formed from two components: the results (grade) of the ongoing control; exam grade.

The maximum number of points for the ongoing control is 60, for the examination is 40.

The minimum amount by which the exam is considered as passed is 25 points.

The grade for the ongoing control is formed as the sum of rating points received by the student during the seminars/practical classes and incentive (if provided) points.

After evaluating the student's answers on the exam, the professor summarizes the points received for the ongoing control measures and points for the exam to obtain the final grade for the course.

Scale for the assessment of exam tasks

| Scale | Total points | Criteria |
|---|---|---|
| Excellent level | 30–40 | The task is completed with high quality; the student has achieved the maximum score in the assessment of theoretical knowledge. |
| Good level | 20–29 | The task is completed with high quality and a sufficiently high proportion of correct answers. |
| Satisfactory level | 10–19 | The task is completed with an average number of correct answers; the student has demonstrated theoretical knowledge with significant errors. |
| Unsatisfactory level | 0–9 | The task is not completed; the student has demonstrated theoretical knowledge with major errors. |

**Assessment of additional (individual) types of educational activities.** Additional (individual) types of educational activities include the participation of applicants in scientific conferences, scientific societies and problem groups, preparation of publications, etc. in excess of the tasks established by the relevant syllabus of the academic discipline.

By decision of the department, applicants who participated in scientific research work and performed certain types of additional (individual) types of educational activities may be awarded incentive (bonus) points for a certain educational component.

Incentive points are not normative and are not included in the table of distribution of points received by students and the main scale of the assessment system.

One event can be the basis for setting incentive points only for one most relevant educational component.

The total number of points scored by students for completing tasks for independent work is one of the components of the academic performance in the academic discipline. Independent work on each topic according to the work program of the academic discipline is evaluated in the range from 0 to 3 points using standardized generalized knowledge assessment criteria.

Scale for evaluating the performance of independent work (individual tasks)

| The maximum possible assessment of independent work (individual tasks) | Execution level | | | |
|---|---|---|---|---|
| | Excellent | Good | Satisfactory | Unsatisfactory |
| 2 | 2 | 1,5 | 1 | 0 |

Forms of control: ongoing control based on the performance of practical work; ongoing control of knowledge acquisition based on the assessment of oral answers to questions, messages, reports, etc. (in practical (seminar) classes); individual or collective project that requires the formation of practical skills and abilities of students (selective form); solving situational tasks; a summary made on the topic studied independently; testing, performing a written test; draft articles, speech abstracts and other publications, other forms that contribute to the full assimilation of the educational program and the consistent development of skills for effective independent professional (practical and scientific and theoretical) activity at a high level.

To assess the learning outcomes of a student during the semester, a 100-point, national and ECTS assessment scale is used

Summary assessment scale: national and ECTS

| Total points for all types of learning activities | ECTS assessment | National scale assessment for exam, course project (work), practice | |
|---|---|---|---|
| | | National scale assessment for exam, course project (work), practice | For pass/fail (credit) |
| 90 – 100 | A | excellent | pass |
| 82 – 89 | B | good | |
| 75 – 81 | C | | |

| | | | |
|---|---|---|---|
| 68 – 74 | D | satisfactory | |
| 60 – 67 | E | | |
| 35 – 59 | FX | unsatisfactory with the possibility of retaking | fail<br><br>unsatisfactory with the possibility of retaking |
| 0 – 34 | F | unsatisfactory with mandatory re-study of the discipline | fail<br><br>unsatisfactory with mandatory re-study of the discipline |

**Course Policy.**

- regularly attend lectures and practical classes;
- work systematically and actively in lectures and practical classes;
- catch-up on missed classes;
- perform the tasks required by the syllabus in full and with appropriate quality;
- perform control and other independent work;
- adhere to the norms of academic behaviour and ethics.

The course " Fundamentals of Biology, Human Genetics and Anthropology" involves mastering and adhering to the principles of ethics and academic integrity, in particular, orientation on preventing plagiarism in any of its manifestations: all works, reports, essays, abstracts and presentations must be original and author's, not overloaded with quotes, which must be accompanied by references to primary sources. Violations of academic integrity are considered: academic plagiarism, self-plagiarism, fabrication, falsification, copying, deception, bribery, biased evaluation.

The assessment of the student is focused on receiving points for activity in seminar classes, completing tasks for independent work, as well as completing tasks that can develop practical skills and abilities, for which additional (bonus) points can be awarded (participation in round tables, scientific conferences, scientific competitions among students).

**Methodological support of the academic discipline**

Teaching and methodological materials that provide support for the discipline: lecture notes, methodological recommendations for conducting practical (seminar) classes and methodological recommendations for independent

work of higher education students in the academic discipline " Fundamentals of Biology, Human Genetics and Anthropology".

**Recommended sources of information.**

**Basic**

1. Bazhora Yu.I. . Educational and methodological manual for practical classes in medical biology (laws of heredity and variability, human genetics) for applicants for higher education of the second (master's) level of the 1st year of medical faculties./ Bazhora Yu. I., Shevelenkova A. V., et al. Odesa: Odessa National Medical University, 2023. 77 p.

2. Bartsikhovsky V.V., Sherstyuk P.Ya. Medical biology: textbook, 5th edition. Kyiv: All-Ukrainian Specialized Publishing House "Medicine", 2024. 312 p.

3. Ilyina Yu.Yu. Fundamentals of human biology: textbook. For higher education applicants studying at the first (bachelor's) level in the specialty 053 "Psychology", according to the educational programs: "Extreme and crisis psychology" and "Work with personnel" / Compiled by: Yu.Yu. Ilyina, L.A. Perelygina, Yu.O. Prykhodko. Kharkiv: NUTZU, 2019. 279 p.

4. Pomogaibo V.M. Genetics of mental disorders. K.: Magnolia, 2006. 162 p.

5. Pomogaibo V.M., Petrushov A.V. Genetics of a person. K.: Academy, 2014. 282 p.

6. Solokhina, L.O. Anthropology: teaching aids. / L.O. Solokhina; Ministry of Internal Affairs of Ukraine, Kharkiv. National University of Internal Affairs. Kharkiv[: KhNUVS], 2022. 194 p.: ill.

7. Syvolob A.V. Genetics: textbook / A.V. Syvolob, S.R. Rushkovsky, S.S. Kyryachenko and others. Kyiv: Publishing and Printing Center "Kyiv University", 2008. 320 p.

8. Fedonyuk Ya.I. Medical biology, anatomy, physiology and pathology of man / Fedonyuk Ya.I., Dubinin S.I., Fedonyuk L.Ya., Kotlyarenko L.T./ Kyiv: Novyy svit-2000, 2022. 880 p.

**Additional**:

1. Grusha M.M., Shepelev S.E. Human biology. Textbook. Kyiv: Condor, 2018. 272 p.

2. Zaporozhan V. M. Medical genetics: a textbook for universities / V. M. Zaporozhan, Yu. I. Bazhora, A. V. Shevelenkova, M. M. Chesnokova. Odesa: Odessa. state medical university, 2005. 260 p.

3. Lisovenko A. F., Bedan, V. B. Fundamentals of human biology and genetics: a workshop. – Odesa: Phoenix, 2021. – 73 p. URI: https://hdl.handle.net/11300/14415.

4. Pomogaibo V. M. Fundamentals of anthropogenesis: a textbook for students of higher educational institutions / V. M. Pomogaibo, A. V. Petrushov,

N. O. Vlasenko. K.: Akademvydav, 2015. 176 p.

5. Popravko O. V. Anthropology: a textbook. Melitopol: Publishing House of the Bogdan Khmelnytsky State Polytechnic University, 2016. 285 p.

6. Sluzhynska Z. O., Kalynyuk P. P., Sluzhynska O. B. Human heredity (chromosomal and genetic diseases). Lviv. 2017. 99 p.

7. Sobol V.I. Complete course of biology. Structured reference book. K.: Abetka, 2022. 416 p.

8. Novikova A.P. Basic concepts of genetics. Methods of genetic research (/ A P Novikova // Biology. 2019. No. 13 (15). P.61–63.

***Information resources:***

1. *mcb.berkeley.edu/courses*
2. *www.springer.com*
3. *faculty.rcc.edu*
4. *www.archive.org*
5. *freescienceonline.blogspot.com/.*
6. *flt.univ.kiev.ua*
7. *www.nbuv.gov.ua*

**Internet resources:**

1. Hnatyuk, Vitaliy Vasyliovych, et al. Virtual laboratories in biological education: modeling experimental research. Academic visions. 2023. Issue 21. DOI:http://dx.doi.org/10.5281/zenodo.8199004.

2. http://psylib.kiev.ua/ – Library of psychological literature.

3. http://www.morphology.dp.ua/ – Dictionary of morphological terms.

4. http://medicinform.net/human/anatomy.htm – Anatomy, physiology, biology and

genetics, interesting articles about humans.

5. https://lifelib.info/medical/biology/15.html – Fundamentals of medical genetics. Methods of studying human heredity.