

SYLLABUS OF THE EDUCATIONAL COMPONENT HUMAN PHYSIOLOGY AND ANATOMY

for applicants for higher education of the 1st year of study of full-time education
form (4.10 years of study)

of educational program «Pharmacy»

in specialty 226 - "Pharmacy, industrial pharmacy"

specialization 226/01 Pharmacy

field of knowledge 22 Health care

training for the second (Master's) level of higher education



**Kononenko
Alevtina**

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1. Name of higher education institution and department: National University of Pharmacy, Department of Normal and Pathological Physiology.

2. Address of department: Kharkiv, str. Kulikivska, 12, 3rd floor, phone number 057-706-30-66.

3. Web-site of department: <http://pat.nuph.edu.ua>

4. Information about teachers:

Kononenko Alevtina

Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Normal and Pathological Physiology of the National Pharmaceutical University. Experience of scientific and pedagogical activity - 12 years. Reads courses: "Human anatomy", "Human anatomy and the basics of histology", "Human anatomy", "Normal physiology". Scientific interests: anatomy, physiology, research of pharmacological properties of herbal remedies.

5. Consultations take place at the Department of Normal and Pathological Physiology according to the schedule, online video conference in the Zoom program.

6. Brief summary of the educational component: the educational component "Normal Physiology" is a compulsory educational component for the second (master's) level in the specialty 226 - Pharmacy, industrial pharmacy, educational program "Pharmacy".

7. The purpose statement of studying the educational component: the purpose of studying the educational component "Normal Physiology" is to study the functions of human organs and organ systems; determination of the mechanisms of interconnection of organs and systems, assessment of age, gender and individual characteristics of the physiology of human organs.

8. Competences in accordance with the educational program:

Soft skills:

GC 02. Knowledge and understanding of the subject area; understanding of professional activity.

GC 11. Ability to apply knowledge in practical situations, make informed decisions.

Hard-skills / Professional (special) competences (PC)

PC 5. The ability to carry out sanitary and educational work among the population for the purpose of prevention of common diseases, prevention of dangerous infectious, viral and parasitic diseases, as well as for the purpose of promoting timely detection and support of adherence to the treatment of these diseases according to their medical and biological characteristics and microbiological features

9. The program learning outcomes (PLO):

PLO 1. To have and apply specialized conceptual knowledge in the field of pharmacy and related fields, taking into account modern scientific achievements.

PLO 3. To have specialized knowledge and skills/skills for solving professional problems and tasks, including for the purpose of further development of knowledge and procedures in the field of pharmacy.

PLO 8. Formulate, argue, clearly and concretely convey to specialists and non-specialists information based on one's own knowledge and professional experience, the main trends in the development of world pharmacy and related industries.

10. The status of the educational component: *Compulsory*

11. Prerequisites of the educational component: "Biology", "Latin", "Human anatomy"

12. The volume of the educational component: 5.0 ECTS credits: 76 hours of classroom classes, including 16 hours of lectures, 60 hours of practical classes, 74 hours of independent work.

13. Organization of training:

Teaching format of the educational component: lectures, practical classes

Content of the educational component:**MODULE 1. NORMAL PHYSIOLOGY*****Content module 1. Nervous regulation of visceral functions. Higher nervous activity. Sensor systems.***

Topic 1. Introduction to the course of Physiology. Physiology of excitement. Membrane potential, action potential

Topic 2. The structure and physiology of nerve fibers. The structure and function of the synapse. Structure and physiology of muscles.

Topic 3. Nervous System. Properties of nerve centers. Spinal cord. Functions. Spinal cord reflexes.

Topic 4. Brain. Functions of brain departments.

Topic 5. The autonomic nervous system. Sympathetic, parasympathetic and metasymphathetic departments of the ANS. Regulatory functions.

Topic 6. Higher nervous activity. Physiological bases of behavior. Conditional and unconditional reflexes. Memory physiology. Sleep physiology. Types of human HNA.

Content module 2. Humoral regulation of visceral functions. The circulatory system.

Topic 7. Hormones of central glands of internal secretion. Regulatory Function Hormone peripheral glands. Regulatory function.

Topic 8. The physiology of blood system.

Topic 9. Cardiovascular system. Functions. Regulation of cardiovascular activity.

Topic 10. Hemodynamics. Regulation of blood circulation.

Content module 3. Physiology of visceral systems.

Topic 12. The function of the digestive system. Regulation of digestion.

Topic 13. The functions of the excretion. Regulation of the excretion.

Topic 14. Metabolism and energy. Thermoregulation.

Semester credit – test mark

14. Types and forms of academic achievements supervision:

Progress supervision: oral survey, writing test tasks, solving situational problems.

Supervision of content modules: testing, speaking.

Semester control form: semester assessment.

Conditions for admission to the supervision of content modules: the presence of a minimum number of points for topics (lessons) of content module 1, for control of content module 1 (for control of content module 2).

Conditions for admission to the semester supervision I: current rating of more than 60 points, absence of unworked absences of practical classes, availability of the minimum number of points for control of content modules, fulfillment of all requirements stipulated by the work program of the educational component.

15. Evaluation system of the educational component:

Evaluation system from the educational component

The results of semester control in the form of semester differentiated credit are evaluated on a 100-point, differentiated scale ("excellent", "good", "satisfactory", "unsatisfactory") and on the ECTS scale.

Types of assessment	Scores
Module 1	
Content module 1 1. Evaluation of topics 1-7: work in classes (oral survey, writing test tasks, solving situational problems). 1. 2. Control of content module 1: theoretical questions and	30-50
Content module 2 1. Evaluation of topics 8-12: work in classes (oral survey, writing test tasks, solving situational problems). 1. 2. Control of content module 1: theoretical questions and	24-40
Content module 3 1. Evaluation of topics 13-16: work in classes (oral survey, writing test tasks, solving situational problems). 1. 2. Control of content module 1: theoretical questions and	21-35
Semester control from module 1 (CM1+CM 2+CM3)/1.25	60-100

The individual work of applicants for higher education is evaluated during the current control and control of content modules.

16. Academic policies of the educational component:

Academic Integrity Policy. It is based on the principles of academic integrity stated in the POL "On measures to prevent cases of academic plagiarism at the National University of Ukraine". Writing off during the assessment of the success of a higher education student

during control activities in practical (seminar, laboratory) classes, control of content modules and the semester exam is prohibited (including with the use of mobile devices). Abstracts must have correct text references to the used literature. The detection of signs of academic dishonesty in the student's written work is a reason for the teacher not to enroll it.

Class attendance policy. The student of higher education is obliged to attend classes (POL "On the organization of the educational process of the National Academy of Sciences of Ukraine") according to the schedule (<https://nuph.edu.ua/rozklad.zanyat/>), to observe ethical norms of behavior.

Policy regarding deadlines, working out, rating increase, liquidation of academic debt.

The completion of missed classes by a student of higher education is carried out in accordance with the POL "Regulations on the completion of missed classes by students and the procedure for eliminating academic differences in the curricula of the National Academy of Sciences" in accordance with the schedule for making up missed classes established by the department. Increasing the rating and liquidating academic debt from the educational component is carried out by the students in accordance with the procedure specified in the POL "On the procedure for evaluating the results of training of students of higher education at the National Academy of Sciences". Applicants of higher education are obliged to comply with all deadlines set by the department for the completion of written works from the educational component. Works that are submitted late without valid reasons are assessed at a lower grade - up to 20% of the maximum number of points for this type of work.

Policy on appeals of assessment from the educational component (appeals). Applicants of higher education have the right to contest (appeal) the evaluation of the educational component obtained during control measures. The appeal is carried out in accordance with the POL "Regulations on appealing the results of the semester control of the knowledge of students of higher education at the National Academy of Sciences".

17. Informational and educational and methodological support of the discipline:

<i>The main regarding suggestion</i>	<ol style="list-style-type: none"> 1. Synopsis of lectures in Physiology and Human Anatomy: Training aids / L. N. Maloshtan, Ye. K. Ryadnyh, G/ P. Zhegunova et al.; Edited by the head of the Physiology Department Life Sciences Maloshtan L. N. – Kharkiv: PH of NUPh, 2007. – 128 p. 2. Learning manual of human Normal Physiology for practical study / L. M. Maloshtan, V. A. Volkovoy, O. V. Dolzhykova et al. – Kharkiv: NUPh: Golden pages, 2011. – 216 p. 3. Work book in Human Anatomy and Physiology / L. M. Maloshtan, A.G. Kononenko, O. V. Dolzhykova et al. – Kharkiv: NUPh, 2011. – 120 p.
<i>Supplementary reading suggestion for in-depth study of the educational component</i>	<ol style="list-style-type: none"> 1. Eder. Laboratory Atlas of Anatomy and Physiology, Fourth Edition / Eder, Kaminsky, Bertram; The McGraw-Hill Companies, 2003. – 192 p. 2. Widmaier Eric P. Strang. Human Physiology: The Mechanisms of Body Function: 9th Edition / Eric P. Widmaier, Hershel Raff, Kevin T.; The McGraw-Hill Companies, 2003. – 826 p.

	3. Mader Sylvia S. Understanding Human Anatomy & Physiology, Fifth Edition / Mader Sylvia S.; The McGraw-Hill Companies, 2004. – 458 p.
<i>Current electronic information resources (magazines, websites) for in-depth study of the educational component</i>	1. Website of the Department of Pathological Physiology: https://pat.nuph.edu.ua/ 2. NFaU Library: e-mail https://lib.nuph.edu.ua/ 3. Distance learning site https://pharmel.kharkiv.edu/ 4. http://www.josejoserestaurant.com/anatomy-and-physiology-lab-manual-exercise-36.pdf 5. http://www.sixt-martinique.com/anatomy-and-physiology-lab-manual-exercise-36.pdf
<i>Moodle distance learning system</i>	https://pharmel.kharkiv.edu/moodle/course/view.php?id=4529

18. Technical and software support of the educational component: laptop, TV, personal computers with MS Windows 10 Professional Academic OLP MS Office standart 2019 Academic OLP software for testing; multimedia device, screen, a set of services for organizing online and distance learning - Google Workspace for Education Standard, license type - free license for education, unlimited; program for organizing ZOOM video conferences, license type – free license for education; modular object-oriented dynamic learning environment MOODLE 3.9.8 license type – Open Source; electrocardiograph, stopwatch, digital blood pressure meter, tonometer, dry portable spirometer, glucometer, posters of human internal organs, models of human organs and systems.