MINISTRY OF HEALTH OF UKRAINE
KHARKIV NATIONAL MEDICAL UNIVERSITY

Department of Physiology
Training year 2022-2023

SYLLABUS OF EDUCATIONAL COMPONENT

«HUMAN GROWTH AND DEVELOPMENT»

Selective educational component

Internal form of training

Training direction **22 «Health care»**

Specialty (specialization): **223 «Nursing»**

Educational and professional program: **«Nursing»**

1st Bachelor's level of higher education

Course **2** (4 years of study)

Syllabus of educational component was considered at the meeting of Physiology department

Protocol from
«30» of August 2021 № 16

Active head of Physiology department

L.V. Chernobay
(signature) (name, surname)

Approved by methodical commission of KhNMU on problems of natural science training

Protocol from
«31» of August 2021 № 1

Head

O. Yu. Vovk
(signature) (name, surname)

DEVELOPERS OF SYLLABUS:

1. Dmytro Marakushin, professor of Physiology department, D.Med.Sc., professor.
2. Larisa Chernobay, active head of Physiology department, PhD, associate professor.
3. Iryna Karmazina, responsible for organizational and methodical work of Physiology department for foreign students training, PhD, associate professor.

INFORMATION ABOUT TEACHERS PROVIDING TRAINING COMPONENT

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Information about teachers: professional interests include clinical and physiological direction of Physiology educational component with full horizontal and vertical integration. All training-methodical provision of training component is provided at the website of department https://knmu.edu.ua/departments/kafedra-fiziologiyi and in the system of Distant Training of KhNMU on Moodle platform https://distance.knmu.edu.ua/course/view.php?id=5252

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Information about consultations: Off-line consulting are carried out every day from 15:00 to 17:00 and on Saturdays from 9:00 to 15:00 (classrooms of Physiology department according to registration list formed by teachers and schedule of department). Online consultations: according to registration of student for work-offs in ASC system and further organization of rework by teachers in System of Distant Learning of KhNMU.

Location: KhNMU, TLB-3, 5th floor, Physiology department

INTRODUCTION

The syllabus of educational component "Human growth and development" is compiled in accordance with the Educational and professional program (the “EPP”) “Nursing” and Standard of Higher Education of Ukraine (the "Standard") of the first (bachelor) level of higher education in the field of knowledge 22 Health care specialty 223 “Nursing”.

Description of the educational component (abstract).

"Human growth and development" as a selective educational component focuses on the training of highly qualified bachelor of nursing and is one of the most important subjects in the medical education system.

This program is based on the latest advances in medical and biological educational components.

"Human growth and development" as an educational component provides the training of bachelor of nursing who have a significant amount of theoretical and practical knowledge regarding the structural and functional features of the organism at various levels of its organization;

a) is based on higher education seekers' study of medical biology, medical and biological physics, medical chemistry, biological and bioorganic chemistry, morphological educational components and integrates with these educational components;

b) establishes the basis for higher education seekers to study pathophysiology and propaedeutics of clinical educational component, which involves the integration of teaching with this educational component and the formation of the ability to apply knowledge of "Human growth and development" in the process of further training and professional activity;

c) lays the foundation for a healthy lifestyle and prevention of functional impairment in the process of life.

The subject of study of the educational component is the structure and functions of a living organism, their relationship with each other, their regulation in the process of evolution and individual development of an individual.

Interdisciplinary relations: the educational component is based on the study of medical biology, Latin language, ethics, philosophy, ecology, medical and biological physics, medical chemistry, biological and bioorganic chemistry, morphological educational components and integrates with these educational components, laying the foundations for higher education seekers to study pathophysiology, pathomorphology, deontology and propaedeutics of clinical educational component, which involves the integration of teaching with these educational components and the formation of the ability to apply knowledge of physiology in the process of further training and professional activity; lays the foundation for a healthy lifestyle and prevents the disruption of the structure and functions in the process of life.

Educational component page in the Moodle system: Department of Physiology, course: https://distance.knmu.edu.ua/course/view.php?id=5252

1. PURPOSE AND TASKS OF THE EDUCATIONAL COMPONENT

1.1. The purpose of the study of the educational component "Human growth and development" - is to acquire knowledge about the objective regularities of body functions, the relationship of these functions, their changes in the process of growth and development in order to use the acquired knowledge in the study of the following medical educational components, and in future professional activities; ensuring understanding of the concept of health, a healthy lifestyle and prevention of functional impairment in the process of life. The ultimate goal of studying the educational component "Human growth and development" is established on the basis of the "Nursing" EPP in the specialty of general and pre-specialized training and is the basis for building the content of the educational component.

1.2. The main task of studying the educational component "Human growth and development" is a systematic approach to studying the essence of physiological processes, functions of individual organs, systems and all means in the process of growth and development. Formation of students of higher education practical skills of identification and assessment of functional features in the process of growth and development of the organism.

1.3 Competence and learning outcomes, the formation of which is facilitated by educational component e (the relationship with the normative content of the training of higher education graduates, formulated in terms of the results of training in the EPP "Nursing").

1.3.1. According to the requirements of the standard, educational component ensures higher education seeker acquisition of following competences:

- **integral:**

A bachelor of nursing is able to solve complex specialized tasks and practical problems in the field of nursing or in the learning process, which involves the application of certain theories and methods of the relevant science and is characterized by the complexity and uncertainty of conditions.

- **general:**

GC 03. Ability to abstract thinking, analysis and synthesis.
GC 04. Ability to apply knowledge in practical situations.
GC 05. Knowledge and understanding of the subject area and understanding of professional activity.

- **professional:**

PC 02. The ability to recognize and interpret signs of health and its changes, illness or disability (assessment/diagnosis), limitations of the possibility of full-fledged life activities, and to determine the problems of patients with various diseases and conditions.

PC 04. Application of professional skills (abilities), medical means, interventions and actions to ensure the patient/client's with dignity, privacy (intimacy), confidentiality, protection of his rights, physical, psychological and spiritual needs on the basis of transcultural nursing, tolerant and non-judgmental behavior.

PC 05. The ability to effectively apply a combination of nursing skills (abilities), medical supplies, interventions and actions to ensure care based on a holistic approach, taking into account the satisfaction of the patient's needs for comfort, nutrition, personal hygiene and the ability of the individuals to meet their daily needs.

PC 06. The ability to effectively apply a set of professional skills (abilities), medical supplies, interventions and actions in assessing the functional status of patients/clients, preparing them for diagnostic examinations and taking biological material for laboratory examinations.

PC 11. The ability to execute the medical and social rehabilitation in order to restore the population health.

1.3.2. Studying the educational component ensures that higher education seekers acquire the following **program learning outcomes**

PLO 1. Conduct a nursing subjective and objective examination of various organs and systems of the patient and evaluate the obtained data.
In the conditions of health care facilities and at home, by communicating with patients of different ages, their relatives or close friends, a sick child and his parents, be able to collect complaints, disease history, life history, allergic history, epidemiological history, evaluate anamnestic data.

PLO 11. To coordinate activities using a combination of multiple skills to ensure patient nutrition.

1.3.3. The study of the educational component ensures that higher education seekers acquire the following **social skills (Soft skills)**: creativity, intellectual development, sociability, the ability to work in a team, the ability to resolve conflicts, leadership, the ability to take responsibility, work in critical conditions, manage your time, understanding the importance of deadlines (timely performance of assigned tasks), the ability to think logically and critically, make independent decisions, etc.

As a result of studying the educational component the higher education seekers must know:

• Mechanism of formation of the state of physiological functions of the organism, its systems and organs.
• Age features of the body functions and their regulation.
• To know the parameters and make conclusions about the mechanisms of the nervous and humoral regulation of the physiological functions of the organism and its systems.
• The state of human health under different conditions based on physiological criteria.

Higher education seekers must be able:

• To interpret mechanisms and regularities of functioning of excitatory structures of an organism.
• Analyze the state of sensory processes in providing human life.
• Explain the physiological basis of the methods of studying the functions of the organism.
• Explain the mechanisms of the integrative activity of the organism.

2. INFORMATION VOLUME OF EDUCATIONAL COMPONENT

<table>
<tr><td rowspan="2">Indexes names</td><td rowspan="2">Branch of knowledge, direction of training, educational and qualification level</td><td>Characteristics of educational component</td></tr>
<tr><td>Form of education
Full-time</td></tr>
<tr><td>Number of credits – 3</td><td>Branch of knowledge
22 «Health care»</td><td>Selective</td></tr>
<tr><td rowspan="5">Total quantity of hours - 90</td><td rowspan="5">Specialty:
223 «Nursing»</td><td>Training year:</td></tr>
<tr><td>2nd</td></tr>
<tr><td>Semester</td></tr>
<tr><td>III</td></tr>
<tr><td>Lectures</td></tr>
<tr><td rowspan="9">Quantity of hours for full-time training:
Class hours – 32
Individual work - 58</td><td rowspan="9">Educational and qualification level:
first (bachelor) level of higher education,
Professional qualification
«Bachelor of Nursing»
EPP «Nursing»</td><td>--- hours</td></tr>
<tr><td>Practical classes and seminars</td></tr>
<tr><td>32 hours</td></tr>
<tr><td>Laboratory classes</td></tr>
<tr><td>--- hours</td></tr>
<tr><td>Individual work</td></tr>
<tr><td>58 hours</td></tr>
<tr><td>Individual tasks:
--- hours.</td></tr>
<tr><td>Type of control:
credit</td></tr>
</table>

2.1 Description of the educational component

2.2.1 Lectures

Lectures are not included in the curriculum.

2.2.2 Seminar classes

Seminar classes are not included in the curriculum.

2.2.3 Practical classes

№	Topic	Hours	Methods teaching	Forms control
1	General patterns of growth and development of the organism in ontogenesis. Evaluation of the physical development of the body. Research methods. Age periodization.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
2	Growth and development of the locomotor functional system of the body. Determination of posture.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
3	Development of the nervous system in ontogenesis. Research of nervous control mechanisms of visceral functions of organism.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
4	Humoral influence on the growth and development of the human body. Research of humoral control of visceral functions of organism.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control;

			teaching methods.	report; declamation
5	Development of the cardiovascular system in ontogenesis. Age-related features of the functional systems of blood and blood circulation.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
6	Development of the respiratory system in ontogenesis. Age-related features of the functional respiratory system.	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
7	Age-related features of the functional system of digestion and nutrition. Age-related features of metabolism and energy	4	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
8	Development of the excretory system in ontogenesis. Age features of the functional system of allocation.	2	Verbal, visual, practical: demonstration, presentation, solution of situational problems using interactive teaching methods.	Oral and written (individual Frontal poll; programmed test control, creative tasks; individual tasks; abstracts; mutual control; self-control; report; declamation
9	**Attestation class. Credit.**	2	Verbal, visual, solutions to situational problems.	Programmed test control, oral survey.
	Total hours	**58**		

2.2.4. laboratory classes

laboratory classes are not included in the curriculum.

2.2.5. Individual work

№	Topic	Hours	Methods teaching	Forms control

1	Preparation for practical classes – theoretical preparation and development of practical skills.	16	Implementation tasks in written, printed or electronic form.	Verification of completed methodological recommendations for independent training of higher education seekers. self-control
2	Topic 1. Motor reflexes of the spinal cord, their reflex arcs, physiological significance and formation in ontogenesis.	4	Study and analysis of basic and auxiliary literature, video clips, video films, Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	Report, presentation, mutual control
3	Topic 2. Interaction of different levels of the central nervous system in the regulation of motor functions in different periods of human growth and development.	4	Study and analysis of basic and auxiliary literature, video clips, video films, Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	Report, presentation, mutual control
4	Topic 3. Language, its functions, physiological foundations of formation. The role of language in human development and its importance for society.	4	Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	individual tasks; abstracts; self control
5	Topic 4. Thinking. Development of abstract thinking in a person. The role of brain structures in the process of thinking in different periods of ontogenesis.	4	Search, mastery of knowledge, coaching (training)	individual tasks; abstracts; self control
6	Topic 5. The concept of the body's immune system. Types of immunity. Formation of immunity in children. Physiological basis of vaccination.	4	Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	Report, presentation, mutual control
7	Topic 6. The	4	Search, mastery of	individual tasks;

	influence of physical exertion on the parameters of external breathing in children and adolescents. Breathing gymnastics.		knowledge. Implementation tasks in written, printed or electronic form.	abstracts; self control
8	Topic 7. The need for basic nutrients and energy depending on age, physical and mental load. Vitamins and their influence on the growth and development of the body.	4	Study and analysis of basic and auxiliary literature, video clips, video films, Implementation tasks in written, printed or electronic form.електронній формі.	Report, presentation, mutual control
9	Topic 8. Hypo- and hyperthermia, functional changes in thermoregulation during ontogenesis. Age and sex characteristics of thermoregulation.	4	Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	individual tasks; abstracts; self control
10	Topic 9. The role of hormones in the process of linear growth of the body, in the physical and mental development of a person	6	Search, mastery of knowledge. Implementation tasks in written, printed or electronic form.	Report, presentation, mutual control
11	Preparation for the final attestation class.	4	Study and analysis of basic and auxiliary literature, Search, mastery of knowledge. Implementation tasks in written, or electronic form.	Verification of completed methodological recommendations for independent training of higher education seekers. self control
	Total hours	**58**		

3. EVALUATION CRITERIA

3.1. The evaluation of the educational success of education seekers is carried out on the basis of the current **"Instructions for evaluating the educational activity of education seekers of the KNMU",** approved by the order of the KNMU dated **August 21, 2021. №181**

Evaluation of the success of higher education seekers' training in the ECTS of the organization of the educational process (CTA) in the educational component "Human growth and development" Assessment of Current Training Activities (CTA).

Recalculation of the average mark for current activity in a multi-point scale

Is conducted in accordance with the "Instructions for the assessment of educational activities".

When assessing the mastering of each educational component subject (CTA), the higher education seekers is evaluated according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory".

The final score for the current training activity (CTA) is defined as the arithmetic average of the traditional estimates for each class and software rounded to 2 decimal signs and converted to a multi-point scale according to Table 1.

The recalculation of the average score for the CTA "Human growth and development" educational component, which ends with the credit, is conducted in accordance with Table 1.

Table 1.

Recalculation of the average mark for current activity in a multi-point scale (for educational components that end with credit)

4-points scale	200-points scale	4-points scale	200-points scale	4-points scale	200- points scale
5	200	4.22-4,23	169	3.45-3,46	138
4.97-4,99	199	4.19-4,21	168	3.42-3,44	137
4.95-4,96	198	4.17-4,18	167	3.4-3,41	136
4.92-4,94	197	4.14-4,16	166	3.37-3,39	135
4.9-4,91	196	4.12-4,13	165	3.35-3,36	134
4.87-4,89	195	4.09-4,11	164	3.32-3,34	133
4.85-4,86	194	4.07-4,08	163	3.3-3,31	132
4.82-4,84	193	4.04-4,06	162	3.27-3,29	131
4.8-4,81	192	4.02-4,03	161	3.25-3,26	130
4.77-4,79	191	3.99-4,01	160	3.22-3,24	129
4.75-4,76	190	3.97-3,98	159	3.2-3,21	128
4.72-4,74	189	3.94-3,96	158	3.17-3,19	127
4.7-4,71	188	3.92-3,93	157	3.15-3,16	126
4.67-4,69	187	3.89-3,91	156	3.12-3,14	125
4.65-4,66	186	3.87-3,88	155	3.1-3,11	124
4.62-4,64	185	3.84-3,86	154	3.07-3,09	123
4.6-4,61	184	3.82-3,83	153	3.05-3,06	122
4.57-4,59	183	3.79-3,81	152	3.02-3,04	121
4.54-4,56	182	3.77-3,78	151	3-3,01	120
4.52-4,53	181	3.74-3,76	150	Менше 3	Недостатньо
4.5-4,51	180	3.72-3,73	149		
4.47-4,49	179	3.7-3,71	148		
4.45-4,46	178	3.67-3,69	147		

4.42-4,44	177	3.65-3,66	146
4.4-4,41	176	3.62-3,64	145
4.37-4,39	175	3.6-3,61	144
4.35-4,36	174	3.57-3,59	143
4.32-4,34	173	3.55-3,56	142
4.3-4,31	172	3.52-3,54	141
4,27-4,29	171	3.5-3,51	140
4.24-4,26	170	3.47-3,49	139

Score for the educational component "Human growth and development"

Educational component "Human growth and development" is studied during 1 semesters, therefore, the assessment from educational component is defined of the CTA, which is transferred to the 200-point scale of the ECTS (Table 1).

The maximum number of points a higher education seeker can score for studying a educational component is 200 points, the minimum number of points is 120. the minimum current training activity - 70 and the exam results - 50 points.

Assessment of independent work of higher education seekers

Assimilation of those topics that are issued only for independent work, is checked during the final class and credit.

3.2. Questions for credit preparation

3.2.1The list of practical tasks for the preparation of students of higher education for the assessment of the educational component "Human growth and development"

1. Draw and explain the scheme the structure and mechanisms:
   - contours of biological regulation, reflex arcs of motor reflexes;
   - influence of different hormones on target cells and regulation of their secretion, contours of regulation of visceral functions with the participation of hormones.
2. To assess the state of development of sensory systems by indicators of their functions.
3. Draw the scheme explaining the formation of biological forms of behavior, and explain the mechanisms of each of its stages.

4. Evaluate and interpret the results of research characterizing the types of human HNA.
5. To assess the condition and development of the body during physical exertion according to functional indicators.
6. To interpret indicators of the leukocyte formula and its changes at different stages of ontogenesis.
7. Interpret coagulogram indicators and assess the state of the hemostasis system depending on the person's age.
8. Determine and evaluate the main indicators of the ECG. Interpret age-related changes in ECG. Calculate the heart rate and draw a conclusion about the electrical activity of the heart based on the ECG indicators.
9. Measure blood pressure using Korotkov's auscultatory method. Palpate the arterial pulse. Interpret age-related changes in the circulatory system according to hemodynamic indicators.
10. Evaluate and characterize spirogram indicators and their changes in the process of ontogenesis.
11. Be able to determine the clearance of a substance and calculate the GFR to assess the effectiveness of kidney functions in the process of ontogenesis.

3.2.2 The list of theoretical questions for the preparation of students of higher education for the assessment of the educational component "Human growth and development":

1. Levels of the structure of the human body and its functions.

2. Motor reflexes of the spinal cord, their reflex arcs, physiological significance and formation in ontogenesis.
3. Features of the main stages of child development. Critical periods of development.
4. Define the concepts: physical, biological, mental development. Indicators determining biological age, their role at different stages of development.
5. Individualizing and generalizing methods of assessment of physical development.
6. Requirements for the somatometric method of assessing physical development.
7. Norms of physical development.
8. Assessment of development based on anthropometric data. Applied value of anthropometric studies.
9. Harmonious and disharmonious development.
10. Body proportions, their changes at different stages of ontogenesis.
11. The concept of acceleration and deceleration of development.
12. Departments of the human skeleton. Types of bones and their joints, age characteristics. Curves of the spine. Periods of formation of spinal curves.
13. Changes in the mechanical strength of bone tissue with age.
14. Relationship between physical and mental development.
15. The structure of the tubular bone. The mechanism of bone growth in length. Periosteum, its functions. Bone growth in thickness.
16. The main stages of development of the muscular system in a child.
17. Concept of muscle tone, dynamic and static work. Age-related changes in muscle function.
18. Disorders of the musculoskeletal system (posture, flat feet).
19. Interaction of different levels of the central nervous system in the regulation of motor functions in different periods of human growth and development. The role of hormones in the regulation of the development of the musculoskeletal system and linear growth of the body.
20. Functions of the new cerebral cortex and higher human nervous activity, development in ontogenesis.
21. Language, its functions, physiological foundations of formation. The role of language in human development and its importance for society.
22. Thinking. Development of abstract thinking in a person. The role of brain structures in the process of thinking in different periods of ontogenesis.
23. Types of higher human nervous activity. Types of temperament and character formation in the process of growth and development.
24. Formation of behavioral reactions in the process of development of factors.
25. Changes in human behavior from birth to the end of the first year of life.
26. Development of higher nervous activity in children 1-3 years old.
27. Development of higher nervous activity of children 3-5 years old.
28. Behavior of preschool children.
29. Development of higher nervous activity of children and adolescents of school age.
30. Development and age-specific features of the sense of light and color.
31. Age-related changes in the accommodation capacity of the visual analyzer.
32. Age features of the auditory analyzer.
33. Age features of the vestibular analyzer.
34. Age features of the tactile analyzer.
35. Age features of the taste analyzer.
36. Age features of the olfactory analyzer.
37. Plasma and formed elements of blood. Blood functions. Age-related changes in blood composition. Formation of blood groups.
38. The concept of the body's immune system. central and peripheral organs of immunity; their development in the process of ontogenesis. Types of immunity. Formation of immunity in children. Physiological basis of vaccination.
39. Age-related features of the cardiovascular system. Features of the structure of the heart muscle in children in different periods. The importance of motor activity for the development of the cardiovascular system.
40. Age-related features of the respiratory system. Types of breathing. How does the type of breathing change with age?

41. Indicators of external respiration. Static and dynamic indicators of the respiratory system, their definition and age-related changes.
42. Features of the structure of the nasal cavity and sinuses in children. Adenoids.
43. The influence of physical exertion on external breathing indicators in children and adolescents. Breathing gymnastics.
44. Age-related features of the digestive system.
45. The value of rational nutrition. Rational nutrition.
46. Metabolism. General characteristics and basic concepts. Plastic and energy exchange. Peculiarities of metabolism in different age groups
47. The need for basic nutrients and energy depending on age, physical and mental load.
48. The importance of proteins in the body. Consequences of insufficient intake of proteins with food. Concept of nitrogen balance.
49. The importance of fats and carbohydrates for energy and plastic metabolism.
50. The concept of vitamins, their influence on the growth and development of the body.
51. Meaning and nutritional value of basic food products. Basic principles of children's nutrition.
52. Age-related features of kidney function.
53. Hypo- and hyperthermia, functional changes of the thermoregulation system during ontogenesis.
54. Center of thermoregulation. Peripheral and central thermoreceptors. Nervous and humoral mechanisms of thermoregulation.
55. Regulation of body temperature when the temperature of the external environment changes. Physiological bases of hardening. Age and sex characteristics of thermoregulation.
56. The scheme of humoral regulation. Regulation of hormone secretion by endocrine glands.
57. The role of the hypothalamic-pituitary system in regulating the functions of the endocrine glands.
58. The role of somatotropin, thyroxine and triiodothyronine, insulin in the regulation of linear growth of the body, processes of physical and mental development of the body.
59. The role of calcitonin, parathyroid hormone and calcitriol in the regulation of ion homeostasis in the body.
60. The role of pancreatic hormones in the regulation of body functions.
61. The role of thyroid hormones (T3, T4) in the regulation of body functions.
62. Physiology of the female reproductive system, its functions, the role of female sex hormones in the development of effects.
63. Physiology of the male reproductive system, the role of male sex hormones in the development of the body.

3.3. Control questions

Control questions, tasks for independent work are placed on the information stands of the department and on the page of the Department of Physiology on the Moodle platform of the Distance Learning system of KhNMU.

3.4. Individual tasks:

1. Development of circuits of regulation of functional systems of an organism.
2. Analysis of the literature and discussion on the topics:
a) the role of somatotropin, thyroxine and triiodothyronine, insulin in the regulation of linear growth of the body, processes of physical and mental development of the body;
b) hypo- and hyperthermia, functional changes of the thermoregulation system during ontogenesis;;
c) cortical representation of functions of the hemispheres;
d) language, physiological mechanisms of its development, cortical representation of its centers, their interaction.
4. Participation with reports at conferences, preparation of analytical reviews with presentations, etc.

Assessment of individual student tasks*:* At the meeting of the department, a list of individual tasks with the determination of the number of points for their completion, which can be added as incentives (no more than 10), was approved (Methodical meeting of the Department of Physiology dated August 30, 2021. Protocol No. 16). Points for individual assignments are awarded to higher education seekers once only by commission (committee - head of the department, head teacher, teacher of the group) and only under the conditions of their successful completion and defense. The total number of points for PND cannot exceed 200 points.

3.5. Rules for appealing the assessment: the appeal in case of receiving a negative assessment is carried out on the same day by submitting an application to the head of the Department of Physiology, who appoints a committee of examiners to retake the final class. (Положення про апеляцію результатів підсумкового контролю здобувачів освіти ХНМУ)

4. POLICY OF THE EDUCATIONAL COMPONENT (a system of requirements and rules for the behavior of higher education seekers of higher education when studying the educational component, in particular, the teacher's reaction to untimely completed tasks, missed classes, behavior in the classroom, requirements for medical clothing, etc., separately indicate the availability and conditions of study for persons with special educational needs).

Policy and values educational component: "Human growth and development". Educational component requirements: Graduate higher education seekers are expected to attend all practical sessions. If a higher education seeker of higher education was absent from a practical session, he must complete this session. The thematic plans of practical classes and the work schedule of the teachers of the Department of Physiology, who accept internships, are posted on the information stand of the department, in the ASU system and in the Distance Learning system of KhNMU on the Moodle platform. Written and homework assignments must be completed in full and on time, if higher education seekers of higher education have questions, they can contact the teacher in person or by e-mail, which the teacher provides at the first practical session. During the practical class, higher education seekers of higher education are recommended to keep a summary of the class and maintain a sufficient level of silence. Asking questions to the lecturer is absolutely normal.

Attending classes and behavior: timely completion of missed practical classes, inadmissibility of lateness and missing classes without a good reason. Compliance with requirements for clothing, medical examination, etc. The use of electronic gadgets during classes is possible only with the permission of the teacher. Behavior in the classroom (the basic yeses and noes): It is important for higher education applicants to follow the rules of appropriate behavior at the university. These rules are general for everyone, they also apply to all teaching staff and employees, and fundamentally do not differ from generally accepted norms. ***During classes, it is allowed to***: leave the audience for a short time if necessary and with the teacher's permission; drink soft drinks; take photos of presentation slides; take an active part in the lesson. During classes, it is forbidden to: eat (with the exception of persons whose special medical condition requires something else - in this case, medical confirmation is required); smoke, use alcoholic and even low-alcohol drinks or narcotic drugs; speak obscenely or use words that insult the honor and dignity of colleagues and teaching staff***;*** gaff; to cause damage to the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter premises and territories); making noise, shouting or listening to loud music in the classrooms and even in the corridors during classes. ***Recommendations for the successful completion of the educational component:*** the activity of higher education seekers of higher education during practical classes, the completion of the necessary amount of educational work, namely active participation during the discussion of theoretical issues, situational tasks and practical skills during practical classes in the format of interactive learning methods. A higher education seeker of higher education should be ready to understand the theoretical material in detail, ask questions, express his point of view, and discuss. During the discussion, the following are important: respect for colleagues and tolerance for others and their experiences; receptivity and impartiality; the ability to disagree with an opinion, but respect the personality of the opponent, thorough reasoning of one's opinion and the courage to change one's position under the influence of evidence; mandatory acquaintance with primary sources. ***A creative approach*** in its various manifestations is welcome. Applicants of higher education are expected to be interested in participating in city, all-Ukrainian and international conferences, competitions and other events from the educational component "Human growth and development" and from the SRW Department of Physiology. ***Encouragement and punishment:*** monothematic higher education seeker conferences are held at the Department of Physiology, participation in the department's SSS, scientific conferences, for active participation in which the higher education seeker receives additional points***.***

Safety techniques: in the first lesson of the educational component "Human growth and development", the basic principles of occupational safety are explained by means of appropriate instruction. Every higher education higher education seeker is expected to know where the nearest exit to the classroom is, where the fire extinguisher is, how to use it, etc. In accordance with the Order of the Rector of KhNMU

"On the Action Algorithm in case of detection of signs of an acute respiratory disease in a higher education seeker, teacher or employee of KhNMU", it is mandatory to observe sanitary and hygienic norms and appropriate behavior in conditions of an epidemic or pandemic.

5. ACADEMIC INTEGRITY.

The Department of Physiology maintains a zero tolerance for plagiarism in accordance with the Order of the Rector of KhNMU "On the procedure for checking in KhNMU text documents of dissertation theses, scientific publications, materials of scientific forums, educational literature, educational and methodical publications and teaching aids for the presence of textual borrowings." Graduates are expected to want to constantly improve their academic writing skills.

In the first classes, information activities will be held on what exactly is considered plagiarism and how to correctly conduct a research and scientific search. ***Academic Integrity Policy:*** Both practical's are important during learning: respect for colleagues; tolerance for others and their experiences; receptivity and impartiality; the ability to disagree with an opinion, but respect the personality of the opponent; thorough reasoning of one's opinion and the courage to change one's position under the influence of evidence; Self-expression, when a person avoids unnecessary generalizations, describes his feelings and formulates his wishes based on his own thoughts and emotions; mandatory acquaintance with primary sources. The procedure for informing about changes in the syllabus: announcements about changes in the syllabus must be published on the page of the Department of Physiology on the Moodle platform of the KHNMU Distance Learning system and on the information stands of the department.

6. RECOMMENDED REFERENCE MATERIALS

Basic references:

1. Medical physiology (eleventh edition) / Arthur C. Guyton, John E. Hall. – Elseveier, 2006.
2. Saladin: Anatomy & Physiology: The Unity of Form and Function (Third Edition) / Saladin K.S. – The McGraw−Hill Companies, 2003.
3. Medical physiology: principles for clinical medicine / edited by Rodney A. Rhoades, David R. Bell. – 4th ed. – Lippincott Williams & Wilkins, a Wolters Kluwer business, 2013.
4. Linda.S.Costanzo Physiology(fifth edition)/Linda.S.Costanzo.–Elsevier, 2014
5. Kim E. Barret Medical Physiology: Examination & Board Review / Kim E. Barret, Susan M. Barman, Scott Boitano, Jane F. Reckelhoff. – © McGraw- Hill Education, 2018.
6. Walter F. Boron; Emile L. Boulpaep Medical Physiology E-Book (3rd ed.) ISBN: 9781455733286, Elsevier Health Sciences, March 2016.
7. Moroz V.M., Shandra O.A., Vastyanov R.S., Yoltukhivsky M.V., Omelchenko O.D. Phisiology: Textbook / Edited by V.M.Moroz, O.A.Shandra. – 5th edition. – Vinnytsia: Nova Knyha Publishers, 2020. – 728 p.

Additional references:

1. Guyton A. C., Hall J. E., Textbook of Medical Physiology. - 13th ed. Elsevier. 2016. – 1038 p.
   First Aid for the USMLE Step 1. 2018: A student to student Guide. McGraw-Hill – 890 p.
2. Despopoulos A. Color Atlas of Physiology/7th edition / A. Despopoulos, S. Silbernagl. - Stuttgart: Georg Thieme Verlag, 2015. - 472 p.
3. Fox, S.I., Human Physiology, 14th edition, 2015.
4. Sebastian S, Puranik N. Recent concepts about sense of smell, odorant receptors and physiology of olfactionan insight. Physiology and Pharmacology. 2016 May 10;20(2):74-82. 29.
5. Tahara Y, Shibata S. Circadian rhythms of liver physiology and disease: experimental and clinical evidence. Nature Reviews Gastroenterology and Hepatology. 2016 Feb.

7. INFORMATION RESOURCES

1. Moodle: Human growth and development / specialty 223 "Nursing " /1st bachelor's level/ 2 course. https://distance.knmu.edu.ua/course/view.php?id=5252
2. https://www.testcentr.org.ua/uk/krok-1
3. The Department of Physiology has available lecture texts (10 lectures - 20 hours) in printed form and on electronic carriers.
4. Presentation of all lectures - on electronic media and in printed form.

5. The base of situational tasks "Krok-1" - on electronic media. and printed.
6. http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_komis_ad_text.pdf
7. http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_neform_osv.pdf
8. INCLUSIVE EDUCATION: http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=7108%3A2021-03-10-14-08-02&catid=12%3A2011-05-10-07-16-32&Itemid=33&lang=uk
9. ACADEMIC HONESTY: http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=2520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk
10. http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/kodex_AD.docx

8. METHODICAL SUPPORT

1. The syllabus of educational component "Human growth and development" of the first (bachelor) level of higher education in the field of knowledge 22 Health care specialty 223 “Nursing”.
2. Program of educational component "Human growth and development"of the first (bachelor) level of higher education in the field of knowledge 22 Health care specialty 223 “Nursing”.
3. Plans for practical classes and independent work of higher education seekers.
5. Methodological recommendations for teachers.
6. Methodological materials providing independent work of higher education seekers.
7. Test tasks and control questions for practical classes.
8. Questions and tasks for control of the mastering of the section.
9. List of questions for credit, tasks for checking practical skills during the credit.