MINISTRY OF HEALTH PROTECTION OF UKRAINE

ODESSA NATIONAL MEDICAL UNIVERSITY

Department of Hygiene and Medical Ecology

APPROVE

Acting vice-rector for scientific and pedagogical work

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01 September, 2022

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE
"General Principles of Medical Nutrition"

Level of higher education: the third (educational and scientific) doctor of philosophy

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

2022

The work program is compiled on the basis of the educational and professional program "Medicine" for the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health care", approved by the Scientific Council of ONMedU (protocol No. 9 of June 23, 2022).

Developers:
head of the department, Doctor of Medicine, Doctor of Medicine, Professor Babienko V.V.
head teacher of the department, senior lecturer Sheikh Ali D.H.

The work program was approved at the meeting of the department hygiene and medical ecology
Protocol No. 10 from June 27, 2022.

Head of Department _____ Volodymyr BABIENKO

Agreed with the OPP guarantor _____ Valery MARICHEREDA

Approved by the subject cyclical methodical commission for medical and biological disciplines of ONMedU
Protocol No. 6 from 30.06.2022

Head of the subject cycle methodical commission for medical and biological disciplines of ONMedU

_____ Olena APPELHANS

Reviewed and approved at the department meeting _____
Protocol No. ___ from "___" _____ 20__ .

Head of Department _____ _____
(signature) *(First Name Last Name)*

Reviewed and approved at the department meeting _____
Protocol No. ___ from "___" _____ 20__ .

Head of Department _____ _____
(signature) *(First Name Last Name)*

1. Description of the academic discipline:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
The total number of: Credits: 4 Hours: 120 Content modules: 2	Branch of knowledge 22 "Health care" Specialty 222 "Medicine" **Level of higher education**: the third (educational and scientific) doctor of philosophy	*Full-time education* *Mandatory discipline*
		Year of training: postgraduate education
		Semesters: according to the schedule
		Lectures (0 hours)
		Seminars (0 hours)
		Practical (60 hours)
		Laboratory (0 hours)
		Independent work (60 hours)
		including individual tasks (0 hours)
		The form of the final control - differential settlement

1. The purpose and tasks of the optional educational discipline "General principles of medical nutritionology"

1.1. The purpose of studying the program is to develop the ability and skills of the graduate student in the organization of the nutrition system of healthy and sick people at different age stages by applying modern scientific provisions of nutricology and in the organization of nutrition in medical and preventive, health and educational institutions, as well as methods of prevention using specially selected diets
Course objectives: Theoretical: - to know the basics of physiology and biochemistry of nutrition, rational nutrition of different age and professional population groups; - justify the principles of prevention of food poisoning, acute intestinal infections and diseases of alimentary origin; - find out the current problems of modern directions in the physiology of nutrition and establish their connection with the health and working capacity of the population; Practical: - to be able to calculate biologically active substances; - to provide justification of the energy value and nutrient composition of the diet; - identify the nutritional status of the body and its disorders; - to be able to develop practical recommendations for the organization of rational nutrition of various population groups; - evaluate food products according to hygienic indicators, the results of bacteriological and toxicological research and formulating a conclusion regarding their quality and compliance with standards; - to establish a connection with educational subjects of the biological direction of general educational institutions - to possess the methodology of conducting educational and advisory work among the population on issues of primary and secondary alimentary prevention of diseases; - promote hygienic knowledge among the population in the field of rational nutrition.
1.2. the physiological needs of the body in food and A
1.3 Competences and learning outcomes, the formation of which contributes to the discipline (relationship with the normative content of the training of higher education applicants).
According to the requirements of the educational and scientific programs of specialties, the discipline ensures that graduate students acquire the following competencies:
Integral competence: Ability to solve complex problems, conduct independent original scientific research and carry out pedagogical, professional, research and innovative activities in the field of medicine
General competences:
ZK 1. Ability to improve and develop one's own intellectual and
general cultural level.
ZK 3. Skills to find, process and analyze information from various sources.
ZK 4. Ability to communicate and work in a professional environment and with representatives of other professions in a national and international context.
ZK 5. The ability to identify, pose and solve problems, the ability to generate new ideas.
ZK 6. Ability to evaluate and ensure the quality of performed works.
ZK 7. Ability to plan and manage time.

Special (professional) competences (SK):
SC 1. Deep knowledge and systematic understanding of the subject area by direction
and the topic of scientific research in the field of medicine, future professional
activities in the field of higher medical education.
SK 2. Ability to determine the need for additional knowledge in the field of scientific research, formulate research questions, generate scientific hypotheses in the field of medicine.
SK 3. Ability to develop and manage scientific projects in the field of medicine.
SK 4. The ability to choose methods and criteria for evaluating subjects
phenomena and processes in the field of medicine in accordance with goals and objectives
scientific project.
SC 5. Possession of modern methods of scientific research.
SK 6. Ability to conduct correct analysis and generalization of scientific results
research.
SK 7. The ability to interpret the possibilities and limitations of research, its role
in society.
SK 8. Introduction of new knowledge (scientific data) into the educational process and practice
Health Care.
SK 9. Publicizing the results of scientific research in oral and written form
forms in accordance with national and international standards.
SC 10. To organize and implement pedagogical activities in higher medical education, to manage the scientific and pedagogical (scientific) team.

Program Learning Outcomes (PLP)
PRN 1. Apply scientific and professional knowledge; formulate ideas
concepts for the purpose of use in the work of educational and scientific direction.
PRN 2. Demonstrate knowledge of research methodology in general and methods
a certain field of scientific interests, in particular.
PRN 3. Interpret and analyze information, correctly evaluate new ones
and complex phenomena and problems with scientific accuracy critically, independently
and creatively.
PRN 4. Identify unsolved problems in the subject area of medicine and
determine ways to solve them.
PRN 5. Formulate scientific hypotheses, the purpose and tasks of scientific research.
PRN 6. Independently and critically analyze and synthesize scientific data.
PRN 7. Develop the design and plan of scientific research, using
relevant research methods in the field of medicine.
PRN 8. Implement and improve modern methods d

research
according to the chosen direction of the scientific project and educational activity.
PRN 9. To invent new methods of diagnosis, treatment and prevention
human diseases.
PRN 10. Use the results of scientific research in medicine
practice, educational process and society.
PRN 11. Interpret the possibilities and limitations of scientific research,
its role in the development of the system of scientific knowledge and society as a whole.
PRN 12. Present the results of scientific research orally and
in written forms in the scientific community and society as a whole,
in accordance with national and international standards.
PRN 13. Manage the work of a team of higher education applicants, colleagues, interdisciplinary
teams
PRN 14. To organize training of participants in the educational process at
performance of scientific and educational activities and to influence them
social development.
PRN 15. Evaluate the effectiveness of the educational process, recommend

ways of its improvement.
PRN 16. Use ethical principles in working with patients,
laboratory animals, observe scientific ethics.
PRN 17. Demonstrate academic integrity and act responsibly regarding the reliability of the obtained scientific results.
Learning outcomes for the discipline.
A graduate student (applicant) should know:
1. The importance of nutrition for restoring the health of a modern person;
2. Problems, trends of development and improvement of dietary nutrition in sanatorium-resort establishments;
3. Modern approaches to increasing the nutritional and biological value of food products to ensure the nutritional status of a person;
4. Assortment of products and methods of food preparation to ensure dietary and therapeutic and preventive effects on the human body;
5. Therapeutic effect of food products on the human body depending on the chemical composition, physical and chemical properties and the method of food preparation;
6. Basics of dietary nutrition, principles of drawing up rations and menus for institutions of various therapeutic orientations

A graduate student (applicant) must be able to:
• Create menus for different contingents of consumers and solve specific tasks related to adjusting the diet;
• Use international and domestic experience of introducing innovations in the activity of sanatorium-resort establishments;
• Organize dietary and functional nutrition in sanatorium-resort facilities;
• Use regulatory documentation; carry out the necessary technological calculations
• Generate new ideas, identify fundamental problems and propose ways to solve them.

2. Structure of the optional educational discipline "General principles of medical nutritionology"

Name of content modules and topics	Number of hours					
	Full-time			Correspondence form		
	All	Including		All	Including	
		Seminar	Independent work		Seminar	Independent work
Chapter No. 1 "Technology of products for dietary nutrition" as a scientific discipline and subject of study. Scientific basis of dietary nutrition.						
The subject, purpose and tasks of the discipline. Basic therapeutic and improving methods.	5	5		5	5	
Peculiarities of the organization of dietary nutrition	5	5		5	5	
The influence of food on the human body and the basics of building food rations.	5	5		5	5	

Basic principles of dietary nutrition. Characteristics and principles of building medical diets	5	5		5	5	
Food allergy and intolerance of some food components	5	5		5	5	
Daily nutritional norms of patients in medical organizations, sanatoriums, preventive clinics	5	5		5	5	
Interchangeability of products when preparing dietary dishes, replacement of products for proteins and carbohydrates	10		10	10		10
Quality composition of food products. Importance of proteins, fats and carbohydrates in the diet. Vitamins, micro-macroelements.	10		10	10		10
Nutrition of pregnant and lactating women	10		10	10		10
Section No. 2 Technologies of food products of plant origin and their role in dietary and therapeutic - preventive nutrition.						
Changes in the chemical components of raw materials during heat treatment.	5	5		5	5	
Technologies of food products of plant origin, their importance in dietary nutrition: vegetables, fruits, nuts						
Importance of drinks, spices in dietary nutrition.	5	5		5	5	
Sugars, sugar substitutes in dietary nutrition.	5	5		5	5	
Interchangeability of products when preparing dietary dishes, replacement of products for proteins and carbohydrates	4	4		4	4	
Water-soluble vitamins: nutritional value, properties, structure, influence of heat treatment and storage means on the nutritional value of vitamins	4	4		4	4	

Technology of cooking dietary vegetable dishes	10		10	10		10
The technology of cooking dietary cereal dishes	10		10	10		10
Technology of preparation of dietary drinks and dishes.	10		10	10		10
Credit class	2	2				
Together:	**120**	**60**	**60**	**120**	**60**	**60**

3. Topics of seminar classes of selective educational discipline
"General Principles of Medical Nutrition"

№	Topic	Number of hours
1.	The subject, purpose and tasks of the discipline. Basic therapeutic and improving methods.	5
2	Peculiarities of the organization of dietary nutrition	5
3	The influence of food on the human body and the basics of building food rations.	5
4	Basic principles of dietary nutrition. Characteristics and principles of building medical diets	5
5	Food allergy and intolerance of some food components	5
6	Daily nutritional norms of patients in medical organizations, sanatoriums, preventive clinics	5
7	Changes in the chemical components of raw materials during heat treatment.	5
8	Technologies of food products of plant origin, their importance in dietary nutrition: vegetables, fruits, nuts	5
9	Importance of drinks, spices in dietary nutrition.	5
10	Sugars, sugar substitutes in dietary nutrition.	5
11	Interchangeability of products when preparing dietary dishes, replacement of products for proteins and carbohydrates	4
12	Water-soluble vitamins: nutritional value, properties, structure, influence of heat treatment and storage means on the nutritional value of vitamins	4
13	Credit class	2
	That's all	**60**

4. Topics of independent works of selective educational discipline
"General Principles of Medical Nutrition"

№	Title of the topic/type of task – essay (multimedia presentation)	Number of hours
1	Interchangeability of products when preparing dietary dishes, replacement of products for proteins and carbohydrates	10
2	Quality composition of food products. Importance of proteins, fats and carbohydrates in the diet. Vitamins, micro- and macroelements.	10
3	Nutrition of pregnant and lactating women	10
4	Technology of cooking dietary vegetable dishes	10
5	The technology of cooking dietary cereal dishes	10
6	Technology of preparation of dietary drinks and dishes.	10
	That'sall	60

Current evaluation criteria in practical training

Evaluation	Evaluation criteria
«5»	The student is fluent in the material, takes an active part in discussing and solving the situational problem, confidently demonstrates practical skills during laboratory research, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
«4»	The applicant has a good command of the material, participates in the discussion and solution of the situational problem, demonstrates practical skills during laboratory and research with some errors, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
«3»	The applicant does not have sufficient knowledge of the material, is unsure of participating in the discussion and solving the situational problem, demonstrates the practical skills of laboratory research with significant errors.
«2»	The applicant does not possess the material, does not participate in the discussion and solution of the situational problem, does not demonstrate the practical skills of laboratory research.

Final control: differential assessment

Differential assessment is carried out at the last lesson of the educational component through an interview with the applicant

The applicant is admitted to the Difzalik on the condition that he meets the requirements of the educational program and if he received at least 3.00 points for the current educational activity and passed the test control of the "Step-2" tests with at least 90% (50 tasks).

The test control is held in the Educational and Production Complex of Innovative Technologies of Learning, Informatization and Continuous Education of ONMedU on the last day of the educational component.

Evaluation of learning results during the final control

The content of the evaluated activity	Scores
Solving the sanitary and hygienic problem	1

Answers to theoretical questions.	2
Assessment of laboratory research data	1
Practical task according to the OSKI type.	1

Criteria for evaluating the learning outcomes of students on differential credit

Rating	Evaluation criteria
Perfectly	The student completed all the tasks correctly, accurately and completely, answered the questions clearly and logically. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving the problem, he correctly interpreted the results of clinical, laboratory and instrumental research, answered all the questions correctly and convincingly substantiated his point of view, could propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSKI type, he correctly demonstrated the implementation of practical skills, strictly followed the algorithm of their implementation.
Good	The student completed all the tasks sufficiently fully, answered the questions clearly and logically. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the student himself when the teacher points them out. When solving the problem, he assumed insignificant errors or inaccuracies in the interpretation of the results of clinical, laboratory and instrumental studies, answered all the questions without significant errors, fully justified his point of view, but the proposal of an alternative option caused difficulties. When solving a practical task according to the OSKI type, he made minor mistakes in the algorithm and technique of performing skills, which were corrected at the instruction of the teacher.
Satisfactorily	The learner completed all the tasks incompletely, the answers to additional and leading questions are vague and vague. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving the problem, he interpreted the results of clinical, laboratory and instrumental studies with errors, did not know individual details, made inaccuracies in the answers to questions, did not sufficiently justify his answers and interpret the wording, experienced difficulties in completing tasks and offering alternative options. When solving a practical task of the OSKI type, significant errors were made in the algorithm and technique of performing the skill.
Unsatisfactorily	The student did not complete the task, in most cases he did not answer additional and leading questions. He did not master the basic amount of theoretical knowledge, he showed a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving the problem, he could not interpret the obtained results of laboratory and instrumental studies, answer the questions, or made significant mistakes in the

	answers; could not justify his decisions or did it unconvincingly. He did not offer alternative options. When solving a practical task according to the OSKI type, he did not demonstrate or make gross errors and mistakes in the algorithm and skill performance technique.

Distribution of points

The grade for the discipline consists of 50% of the grade for the current academic performance and 50% of the grade for the final exam.
The average score for the discipline is translated into a national score and converted into points on a multi-point scale (200-point scale).
The conversion of a traditional grade into a 200-point grade is performed by the information and technical department of the University using the "Contingent" program according to the formula:
Average success score (current success in the discipline) x 40

Table of conversion of traditional assessment to multi-point assessment

National assessment for discipline	The sum of points for the discipline
Excellent ("5")	185 - 200
Good ("4")	151 - 184
Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

According to the ECTS rating scale, the achievements of higher education students in the educational component who are studying in the same course of the same specialty are evaluated, according to the points they received, by means of ranking, namely:

Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale

Rating on a scale ECTS	Statistical indicator
A	Top 10% achievers
B	The next 25% of earners
C	The next 30% of earners
D	The next 25% of earners
E	The next 10% of earners

10. Methodological support

- Working program of the academic discipline
- Syllabus
- Methodical developments for lectures
- Methodical developments for practical classes
- Methodical recommendations for independent work of higher education applicants
- Multimedia presentations
- Situational tasks
- Electronic bank of test tasks by subdivisions of the discipline

Educational and methodical literature:

1. Hygiene and ecology // textbook for students of higher medical educational institutions in English. /edited by V.G. Bardova – Vinnytsia: Nova Knyga, 2018.
2. Environmental Health: from Global to Local \ Under Howard Frumkin edition – Third edition. - San Francisco, 2016
3. General hygiene. Hygiene propaedeutics// Textbook for foreign students. / E.I. Honcharuk, Yu.I. Kundiev, V.G. Bardov- K.: Higher school, 2000.