

MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Department of general and clinical pharmacology and pharmacognosy



APPROVED

Vice-rector for scientific and pedagogical activity

Edward BURIACHKIVSKYI

« 01 » 09 2023 y.

WORKING PROGRAM IN THE DISCIPLINE

«NUTRITION AND BROMATOLOGY »

(full-time education)

Level of higher education: second (master's degree)

Field of knowledge: 22 «Health care»

Specialty: 226 «Pharmacy, industrial pharmacy»

Educational and professional program: Pharmacy, industrial pharmacy

The program was compiled on the basis of the educational and professional program "Pharmacy, industrial pharmacy", training of specialists of the second (master's) level of higher education in the specialty 226 "Pharmacy, industrial pharmacy" field of knowledge 22 "Health care", approved by the Scientific Council of ONMedU (from 29.06 .2023, protocol No. 8).

Authors:

Head of the department, Doctor of Medical Sciences, Prof. Rozhkovsky Yaroslav

Head of the educational part of the department, Ph.D. in biology, docent Prystupa Bohdan

The work program was approved at the meeting of the department of pharmacology and pharmacognosy

Protocol No. 1 dated August 28, 2023

Head of the department



Yaroslav ROZHKOVSKEY

Approved by the guarantor of
the educational and professional program



Liana UNGURYAN

Approved by the subject-cycle methodological commission on pharmacy of ONMedU
Protocol No. 1 dated 29.08.2023

Head of the subject-cycle methodological commission on pharmacy of ONMedU



Natalia FIZOR

Revised and approved at the meeting of the department of Pharmacology and Pharmacognosy
Protocol No. __ dated __/__/20__.

Head of the department

_____ Yaroslav ROZHKOVSKEY

Revised and approved at the meeting of the department of Pharmacology and Pharmacognosy
Protocol No. __ dated __/__/20__.

Head of the department

_____ Yaroslav ROZHKOVSKEY

1. Description of the discipline:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the discipline
Total number:	Field of knowledge 22 «Health care»	<i>Full-time (day) education selective discipline</i>
Credits of ECTS: 3		<i>Course: IV</i>
Hours: 90	Specialty	<i>Semester: VIII</i>
	226 « Pharmacy, industrial pharmacy »	<i>Lectures (0 hours)</i>
Content topics - 15		<i>Seminars (30 hours)</i>
	Level of higher education second	<i>Practical classes (0 hours)</i>
	(master's degree)	<i>Laboratories (0 hours)</i>
		<i>Independent work (60 hours)</i>
		<i>including individual tasks (0 hours)</i>
		<i>Form of final control – Credit</i>

2. The purpose and objectives of the discipline

The goal of teaching the discipline "Nutrition and Bromatology" is the assimilation of the basic terms and concepts of Nutrition and Bromatology by students, the analysis of data on Haruwan hygiene, foodborne diseases, as well as the recognition of food supply and food security problems in Europe from the point of view of food safety and public safety health in Ukraine and European countries, and the study of the main principles of the formation of the structure of food consumption; mastering the skills of evaluating the development of diets for the rational choice of ways to solve the problems of protecting and promoting health; the formation of skills and abilities to conduct information work in practical professional activities regarding the impact of balanced nutrition on human health.

The main objectives are:

- study of the issues of rational nutrition and nutritional status;
- study of the concepts of dietary supplements: features of their composition and use
- study of issues of occurrence of food allergies and food intolerances
- study of recommendations in medical nutrition for diabetes and obesity
- study of recommendations for therapeutic nutrition for diseases of the digestive system
- study of recommendations for medical nutrition for cardiovascular diseases

The process of studying the discipline is aimed at forming elements of the following competencies:

IC - Ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health / pharmacy, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.

GC 1. Ability to act in a socially responsible and conscious manner.

GC 2. Ability to apply knowledge in practical situations.

GC 3. Striving to preserve the environment.

GC 4. Ability to abstract thinking, analysis and synthesis, learn and be modernly trained.

GC 6. Knowledge and understanding of the subject area and understanding of professional activities.

GC 7. Ability to adapt and act in a new situation.

GC 8. Ability to communicate in a professional foreign language (mainly in English) at a level that ensures effective professional activity.

GC 9. Skills of using information and communication technologies.

GC 11. Ability to evaluate and ensure the quality of work performed.

SC 1. The ability to conduct health education among the population.

SC 2. Ability to advise on non-prescription and prescription drugs, medical devices and other pharmacy products; pharmaceutical care in the selection and sale of an over-the-counter medicinal product.

SC 3. The ability to provide pre-medical care to patients and victims in extreme situations and emergency conditions.

SC 4. Ability to ensure the rational use of non-prescription and prescription drugs, medical devices and other goods in the pharmacy range.

SC 7. Ability to ensure the proper storage of medicines and pharmaceutical goods.

SC 9. The ability to analyze and predict the main economic indicators of the activity of pharmacies, to calculate the main taxes and fees, to form prices for medicines and medical products in accordance with the current legislation of Ukraine.

SC 10. Ability to develop, implement and apply the latest management approaches in the professional activities of pharmacy, wholesale, manufacturing enterprises and other pharmaceutical organizations.

SC 11. Ability to analyze socio-economic processes in pharmacy.

SC 15. Ability to organize and participate in the production of medicines in the conditions of pharmaceutical enterprises.

SC 16. The ability to organize and carry out the procurement of medicinal plant materials, to choose ways to solve the problem of conservation and protection of thickets of wild medicinal plants, in accordance with the current legislation.

SC 17. The ability to carry out marketing management of the assortment, price, sales and communication policies of the subjects of the pharmaceutical market.

SC 18. Ability to develop and implement a quality management system for pharmaceutical companies.

SC 20. Ability to develop methods of quality control of medicines.

Program learning outcomes (PLO):

PLO 1. To carry out professional activities in social interaction based on humanistic and ethical principles; to identify future professional activity as socially significant for human health.

PLO 2. Apply knowledge of general and professional disciplines in professional activities.

PLO 3. To comply with the norms of the sanitary and hygienic regime and the requirements of safety equipment when carrying out professional activities.

PLO 4. Demonstrate the ability to independently search, analyze and synthesize information from various sources and use these results to solve typical and complex specialized tasks of professional activity.

PLO 5. To position one's professional activity and personal qualities on the pharmaceutical labor market; formulate the goals of one's own activity taking into account public and industrial interests.

PLO 6. Argue information for decision-making, bear responsibility for them in standard and non-standard professional situations; adhere to the principles of deontology and ethics in professional activity.

PLO 7. Perform professional activities using creative methods and approaches.

PLO 8. To carry out professional communication in the state language, use oral communication skills in a foreign language, analyzing specialized texts and translating foreign language information sources.

PLO 11. Use methods of evaluating indicators of the quality of activity; identify reserves for increasing labor efficiency.

PLO 12. Analyze information obtained as a result of scientific research, summarize, systematize and use it in professional activities.

PLO 14. Determine the advantages and disadvantages of drugs of various pharmacological groups, taking into account their chemical, physicochemical, biopharmaceutical, pharmacokinetic and pharmacodynamic features. Recommend to consumers over-the-counter medicines and other products of the pharmacy assortment with the provision of advisory assistance and pharmaceutical care.

PLO 15. Provide pre-medical assistance to patients with emergency conditions and victims of extreme situations.

PLO 16. Determine the influence of factors that affect the processes of absorption, distribution, deposition, metabolism and excretion of the medicinal product and are determined by the condition, features of the human body and the physico-chemical properties of medicinal products.

PLO 20. To carry out a complex of organizational and management measures to provide the population and health care institutions with medicines and other products of the pharmacy assortment. Carry out all types of accounting in pharmacies, administrative records, product analysis processes.

PLO 21. Calculate the main economic indicators of pharmacy establishments, as well as taxes and fees. Form all types of prices (wholesale, purchase and retail) for medicinal products and other products of the pharmacy assortment.

PLO 22. Manage pharmaceutical organizations and determine its effectiveness using management functions. Make management decisions on the basis of the developed leadership and communication skills of pharmaceutical personnel regarding the strategic planning of enterprise activities.

PLO 23. To take into account data on socio-economic processes in society for the pharmaceutical supply of the population, to determine the effectiveness and availability of pharmaceutical care in terms of medical insurance and reimbursement of the cost of drugs.

PLO 24. Plan and implement professional activities on the basis of normative legal acts of Ukraine and recommendations of proper pharmaceutical practices.

PLO 28. Organize and carry out rational procurement of medicinal plant raw materials. Develop and implement measures for the protection, reproduction and rational use of wild species of medicinal plants.

PLO 29. To ensure competitive positions and effective development of pharmaceutical organizations on the basis of the conducted research work on all elements of the marketing complex.

PLO 31. Carry out all types of quality control of medicinal products; draw up quality certificates of a series of medicinal products and a certificate of analysis, taking into account the requirements of current regulatory documents, the State Pharmacopoeia of Ukraine and the results of quality control. Develop specifications and quality control methods in accordance with the requirements of the current State Pharmacopoeia of Ukraine.

PLO 32. Determine the main organoleptic, physical, chemical, physicochemical and pharmacotechnological indicators of medicinal products, justify and choose methods of their standardization, carry out statistical processing of the results in accordance with the requirements of the current State Pharmacopoeia of Ukraine.

As a result of studying the discipline the student must:

Know:

- basic principles and principles of healthy eating;
- the main components of a balanced diet;
- the consequences of damage to the regime and the foundations of physiological nutrition;
- Basics of food hygiene;
- food dietary and biologically active additives;
- therapeutic diets for diseases of the hormonal, digestive and shinsh systems.

be able to:

- to use professional knowledge in solving practical issues;

- to carry out preventive informing of the population about the importance of proper nutrition;
- to give recommendations to patients regarding special diets;
- independently work with educational and reference literature;
- to apply the basics of nutritional science and bromatology in the study of specialized disciplines..

Passess

- conducting scientific research, both as part of a group and independently, while realizing special means and methods of obtaining new knowledge;
- the ability to diagnose diseases requiring the introduction of special therapeutic diets;
- the basics of treating pathologies with the help of special food diets and the introduction of biologically active additives;
 - free of the content of special food diets and dietary supplements.
 - prevention of diseases that can be caused by improper diet

3. Content of the work program

1. Terminology in Nutrition and Bromatology. Distribution of products by functional purpose. Micronutrients. Conditions caused by imbalance of macro- and microelements in the body.
2. The content of chemical elements in food. Essential substances. Biologically active food additives (BAA). Nutraceuticals. Diet supplements. Xenobiotics. Functional foods (FPPs). Nutritional supplements. Water.
3. Nutrition theory. Principles of rational nutrition: Physiological and hygienic requirements for rational nutrition. Energy and nutritional value of the diet. Energy costs of a person in various types of activities (in excess of the basic metabolism).
4. Food intake rules. Inappropriate food combinations. Mediterranean diet. Unconventional eating methods
5. World market for dietary supplements. Diet supplements. Classification. Parapharmaceuticals and Nutraceuticals. Principles of use.
6. Components of dietary supplements. Components introduced into functional products. Isoflavonoids. digestive enzymes
7. Components DG... Chitosan. Glucosamine. Chondroitin sulfate. Succinic acid. Betaine. Taurine. 3-hydroxymethyl-indole (indole-3-carbinol).
8. Components DG... Chlorophylls. Resveratrol. Ornithine. Sulfur-containing substances. Enzymes. amino acids
9. Dangerous effects of food. Allergy. Significance of allergens. Food allergy. Skin tests. Treating food allergies. Allergens.
10. Nutrition for food allergies. Legal requirements. Food intolerance and its types. enzymopathies
11. Obesity. Obesity. Obesity reasons. Diet number 8. Risk factors for diabetes in children and adults. Diabetes Symptoms Treatment. Nutrition for diabetes. Glycemic index.
12. diet number 9
13. The most common diseases of the digestive system. The effect of food on the function of the gastrointestinal tract. Food chemistry and diet. Diet number 1. Diet number 1a. Diet number 16. Diet number 2. Diet number 3. Diet number 4. Diet number 4a. Diet number 4b. Diet N4c. Hepatitis. Diet No. 5. Diet No. 5P
14. Atherosclerosis. The balance of cholesterol in the human body. Cholesterol synthesis. Excretion of cholesterol from the body. Ways to lower blood cholesterol levels. Therapeutic nutrition at GB... Nutritional therapy for diseasesCCC... Body weight control.
15. Nutrition after suffering myocardial infarction i with ischemic heart disease. Coronary artery disease (CHD). Nutrition for chronic heart failure. Supplements for cardiovascular diseases.

4. The structure of the discipline

Topic	Number of hours
-------	-----------------

	That's all	Including				
		lectures	seminars	practical	laboratory	IWS
Terminology in Nutrition and Bromatotomy. Distribution of products by functional purpose. Micronutrients. Conditions caused by imbalance of macro- and microelements in the body.	2	0	2	0	0	0
The content of chemical elements in food. Essential substances. Biologically active food additives (BAA). Nutraceuticals. Diet supplements. Xenobiotics. Functional foods (FPPs). Nutritional supplements. Water.	8	0	2	0	0	6
Nutrition theory. Principles of rational nutrition: Physiological and hygienic requirements for rational nutrition. Energy and nutritional value of the diet. Energy costs of a person in various types of activities (in excess of the basic metabolism).	8	0	2	0	0	6
Food intake rules. Inappropriate food combinations. Mediterranean diet. Unconventional eating methods	2	0	2	0	0	0
World market for dietary supplements. Diet supplements. Classification. Parapharmaceuticals and Nutraceuticals. Principles of use.	2	0	2	0	0	0
Components of dietary supplements. Components introduced into functional products. Isoflavonoids. digestive enzymes	2	0	2	0	0	0
Components DG... Chitosan. Glucosamine. Chondroitin sulfate. Succinic acid.	8	0	2	0	0	6

Betaine. Taurine. 3-hydroxymethyl-indole (indole-3-carbinol).						
Components DG... Chlorophylls. Resveratrol. Ornithine. Sulfur-containing substances. Enzymes. amino acids	2	0	2	0	0	0
Dangerous effects of food. Allergy. Significance of allergens. Food allergy. Skin tests. Treating food allergies. Allergens.	2	0	2	0	0	0
Nutrition for food allergies. Legal requirements. Food intolerance and its types. enzymopathies	14	0	2	0	0	12
Obesity. Obesity. Obesity reasons. Diet number 8. Risk factors for diabetes in children and adults. Diabetes Symptoms Treatment. Nutrition for diabetes. Glycemic index. diet number 9	2	0	2	0	0	0
The most common diseases of the digestive system. The effect of food on the function of the gastrointestinal tract. Food chemistry and diet. Diet number 1. Diet number 1a. Diet number 16. Diet number 2. Diet number 3. Diet number 4. Diet number 4a. Diet number 4b. Diet N4c. Hepatitis. Diet No. 5. Diet No. 5P	8	0	2	0	0	6
Atherosclerosis. The balance of cholesterol in the human body. Cholesterol synthesis. Excretion of cholesterol from the body. Ways to lower blood cholesterol levels.	8	0	2	0	0	6
Therapeutic nutrition at GB... Nutritional therapy for diseases CCC... Body weight control.	8	0	2	0	0	6
Nutrition after suffering myocardial infarction i with ischemic heart disease. Coronary artery disease	14	0	2	0	0	12

(CHD). Nutrition for chronic heart failure. Supplements for cardiovascular diseases.						
Hours in general:	90	0	30	0	0	60

№	Topic	Number of hours			
		Total	Including		
			L	Pract	IWS
1	Terminology in Nutrition and Bromatotomy. Distribution of products by functional purpose. Micronutrients. Conditions caused by imbalance of macro- and microelements in the body.	4	2		2
2	The content of chemical elements in food. Essential substances. Biologically active food additives (BAA). Nutraceuticals. Diet supplements. Xenobiotics. Functional foods (FPPs). Nutritional supplements. Water.	10	2	2	6
3	Nutrition theory. Principles of rational nutrition: Physiological and hygienic requirements for rational nutrition. Energy and nutritional value of the diet. Energy costs of a person in various types of activities (in excess of the basic metabolism).	2	2		
4	Food intake rules. Inappropriate food combinations. Mediterranean diet. Unconventional eating methods	8	2	4	2
5	World market for dietary supplements. Diet supplements. Classification. Parapharmaceuticals and Nutraceuticals. Principles of use.	2	2		
6	Components of dietary supplements. Components introduced into functional products. Isoflavonoids. digestive enzymes	2	2		
7	Components DG... Chitosan. Glucosamine. Chondroitin sulfate. Succinic acid. Betaine. Taurine. 3-hydroxymethyl-indole (indole-3-carbinol).	2	2		
8	Components DG... Chlorophylls. Resveratrol. Ornithine. Sulfur-containing substances. Enzymes. amino acids	2	2		
9	Dangerous effects of food. Allergy. Significance of allergens. Food allergy. Skin tests. Treating food allergies. Allergens.	2	2		
10	Nutrition for food allergies. Legal requirements. Food intolerance and its types. enzymopathies	4	2		2
11	Obesity. Obesity reasons. Diet number 8. Risk factors for diabetes in children and adults. Diabetes Symptoms Treatment. Nutrition for diabetes. Glycemic index. diet number 9	2	2		
12	The most common diseases of the digestive system. The effect of food on the function of the gastrointestinal tract. Food chemistry and diet. Diet number 1. Diet number 1a. Diet number 16. Diet number 2. Diet number 3. Diet number 4. Diet number 4a. Diet number 4b. Diet N4c. Hepatitis. Diet No. 5. Diet No. 5P	8	2	2	4
13	Atherosclerosis. The balance of cholesterol in the human body. Cholesterol synthesis. Excretion of cholesterol from the body. Ways to lower blood cholesterol levels.	6	2	2	2
14	Therapeutic nutrition at GB... Nutritional therapy for	2	2		

	diseasesCCC... Body weight control.				
15	Nutrition after suffering myocardial infarction i with ischemic heart disease. Coronary artery disease (CHD). Nutrition for chronic heart failure. Supplements for cardiovascular diseases.	4	2		2
	Total	60	30	10	20

5. Topics of lectures / seminars / practical / laboratory classes

5.1. Topics of lectures

Lectures are not provided.

5.2. Topics of seminar classes

No	Topic name	Volume per hour.
1	2	3
1	Topic 1 Seminar lesson 1 Terminology in nutritionology and bromatotomy. Distribution of products by functional purpose. Micronutrients. Conditions caused by a violation of the balance of macro- and microelements in the body.	2
2	Topic 2 Seminar session 2 The content of chemical elements in food products. Essential substances. Biologically active food additives (BAD). Nutraceuticals. Dietary supplements. Xenobiotics. Functional food products (FPP). Nutritional supplements. Water.	2
3.	Topic 3 Seminar lesson 3 Theories of nutrition. Principles of rational nutrition: Physiological and hygienic requirements for rational nutrition. Energy and nutritional value of the diet. Energy expenditure of a person during various activities (above the basic metabolism).	2
4.	Topic 4 Seminar session 4 Eating rules. Improper combinations of food products. Mediterranean diet. Non-traditional methods of nutrition	2
5	Topic 5 Seminar class 5 World market of dietary supplements. Dietary supplements. Classification. Parapharmaceuticals and nutraceuticals. Principles of use.	2
6	Topic 6 Seminar lesson 6 Ingredients of BAD. Components introduced into functional products. Isoflavonoids. Digestive enzymes	2
7	Topic 7 Seminar lesson 7 Components of DD. Chitosan. Glucosamine. Chondroitin sulfate. Succinic acid. Betaine. Taurine. 3-hydroxymethyl-indole (indole-3-carbinol).	2
8	Topic 8 Seminar class 8 Chlorophylls. Resveratrol. Ornithine. Sulfur-containing substances. Enzymes. Amino acids	2
9	Topic 9 Seminar lesson 9 Dangerous effects of food products. Allergy. Meaning of allergens. Food allergy. Skin tests. Treatment of food allergy. Allergens.	2
10	Topic 10 Seminar session 10 Nutrition with food allergy. Legal requirements. Food intolerance and its types. Enzymopathies	2
11	Topic 11 Seminar class 11 Obesity. Degrees of obesity. Causes of obesity. Diet #8. Risk factors for diabetes in children and adults. Symptoms of diabetes: Treatment. Diet for diabetes. Glycemic index. Diet #9	2

12	Topic 12 Seminar lesson 12 The most common diseases of the digestive system. The influence of food on the functions of the gastrointestinal tract. Chemical composition of food and diet. Diet number 1. Diet No. 1a. Diet No. 16. Diet number 2. Diet number 3. Diet number 4. Diet No. 4a. Diet No. 4b. Diet N4v. Hepatitis. Diet No. 5. Diet No. 5P	2
13	Topic 13 Seminar lesson 13 Atherosclerosis. Cholesterol balance in the human body. Cholesterol synthesis. Removal of cholesterol from the body. Ways to reduce the level of cholesterol in the blood.	2
14	Topic 14 Seminar lesson 14 Therapeutic nutrition for GB. Therapeutic nutrition for diseases of the central nervous system. Body weight control.	2
15	Topic 15 Seminar class 15 Nutrition after myocardial infarction and ischemic heart disease. Coronary heart disease (CHD). Nutrition for chronic heart failure. Dietary supplements for cardiovascular diseases.	2
Total:		30

5.3. Topics of practical classes

Practical classes are not provided.

5.4. Topics of laboratory classes

Laboratory classes are not provided.

6. Independent work

No	Topic titles and content	Volume per hour.
1	Topic 2 Factors affecting the quality of drinking water Xenobiotics in drinking water. Preparation for seminar class 2	6
2	Topic 3 Technology of obtaining sausage products. Factors affecting the quality of meat and meat products. Xenobiotics of meat and meat products. Preparation for the seminar class 3	6
3	Topic 7 Factors affecting the quality of fish and fish products. Xenobiotics of fish and fish products. What compounds of fish and fish products indicate their poor quality. Preparation for the seminar class 7	6
4	Topic 10 Factors that affect bread, bakery products in the production process. Xenobiotics of bread, bakery products. Preparation for seminar class 10	6
5	Topic 11 Chemical composition of vegetables. The main vitamin-like substances contained in vegetables. Phytoncides in vegetables. Properties of antinutrients in vegetables. Preparation for seminar class 10	6
6	Topic 12 Organoleptic indicators of quality and freshness of milk and dairy products. Xenobiotics in milk and milk products. Dairy products as functional products. Preparation for seminar class 12	6
7	Topic 13 Phenomenon of nutritional and energy value of alcoholic beverages. Physical and chemical methods of determining the quality of alcoholic beverages. Preparation for seminar class 13	6
8	Topic 14 Types of falsification of food products. Physical and chemical methods of determining adulteration of food products. What documents are used for the analysis of food products. Preparation for seminar class 14	6

No	Topic titles and content	Volume per hour.
9	Topic 15 Concept of "food additives". Reasons for the widespread use of food additives in modern food products. Main classes, subclasses and corresponding technological functions of food additives. Classification of food additives according to the digital coding system according to their purpose. Safety of food additives. Food additives prohibited in Ukraine. Preparation for seminar class 15	6
10	Topic 16 Physico-chemical methods of determining the quality of vegetable oils. Plants that contain vegetable oils. The chemical composition is typical for vegetable oils. Vegetable oils containing omega-3 and omega-6 unsaturated fatty acids. Biological value of vegetable oils. The concept of «trans fats». The process of hydrogenation of oils. Main foods that contain trans fats. Pharmacological properties are typical for vegetable oils. Preparation for seminar class 15.	6
	Total :	60

7. Teaching methods

Practical classes: conversation, solving situational problems.

Independent work: independent work with the textbook, independent work with tests.

8. Methods of control and criteria for evaluating learning outcomes

Current control: oral examination, testing, assessment of practical skills, solving situational problems, assessment of activity in the classroom.

Final control: credit.

Evaluation of the current educational activity in a practical session:

- Evaluation of theoretical knowledge on the subject of the lesson:
 - methods: survey, solving a situational problem
 - maximum score – 5, minimum score – 3, unsatisfactory score – 2.
- Evaluation of practical skills and manipulations on the subject of the lesson:
 - methods: assessment of the correctness of the performance of practical skills
 - maximum score – 5, minimum score – 3, unsatisfactory score – 2.
- Evaluation of practical work on the subject of the lesson:
 - methods: assessment of the correctness of the performance of practical skills
 - maximum score – 5, minimum score – 3, unsatisfactory score – 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

Current evaluation criteria in practical training

Rating	Evaluation criteria
Perfectly «5»	worked systematically during the semester, showed versatile and deep knowledge of the program material during the exam, was able to successfully perform the tasks provided for in the program, mastered the content of the main and additional literature, realized the interrelationship of individual sections of the discipline, their importance for the future profession, showed creative abilities in understanding and using educational program material, demonstrated the ability to independently update and replenish knowledge; the level of competence is high (creative);
Fine «4»	is presented to a student who has demonstrated complete knowledge of the curriculum material, successfully completes the tasks provided for by the program, mastered the basic literature recommended by the program, has shown a sufficient level of knowledge in the discipline and is capable of their

	independent updating and renewal in the course of further education and professional activity; the level of competence is sufficient (constructive and variable);
Satisfactorily «3»	is awarded to a student who has demonstrated knowledge of the main curriculum material in the amount necessary for further education and subsequent work in the profession, copes with the tasks provided for by the program, made some mistakes in the answers on the exam and when completing the exam tasks, but has the necessary knowledge for overcoming mistakes made under the guidance of a scientific and pedagogical worker; the level of competence is average (reproductive);
Unsatisfactorily «2»	is presented to a student who has not demonstrated sufficient knowledge of the main educational program material, has made fundamental mistakes in the performance of the tasks provided for by the program, cannot use the knowledge in further studies without the help of a teacher, has not managed to master the skills of independent work; the level of competence is low (receptive-productive).

The procedure for evaluating the student's educational activity

Current performance. Evaluation of the success of the study of subjects of the discipline is carried out according to the traditional 4-point scale.

In a practical (laboratory) class, students must be interviewed at least once in 2-3 practical (laboratory) classes (no more than 75% of students), and in a seminar - at least once in 3-4 classes (no more than 50 % of students). At the end of the semester (cycle), the number of grades of students in the group should be the same on average.

At the end of each class, the teacher must announce their grades to the students, make a corresponding entry in the Logbook of students' attendance and success and the Student Attendance and Class Attendance Record.

At the end of studying the discipline, the current success rate is calculated - the average current score (arithmetic average of all current grades on a traditional scale, rounded to two decimal places).

At the last practical lesson, the teacher is obliged to provide information to students about the results of their current academic performance and academic debt (if any), as well as to fill out the student's record book when completing the training program in the discipline.

Current grades of "3" or "4" are not transferred to increase the grade point average in the discipline.

In the student's record book, the teacher enters the assessment of the discipline according to the traditional and 200-point scales.

9. Distribution of points received by applicants for higher education

The grade for the discipline is 100.0% from the grade for current performance.

The average score for the discipline is translated into a national grade and converted into scores on a multi-point scale.

Conversion of the traditional grade for the discipline in the 200-point is carried out by the information and computer center of the university program "Contingent".

Table for conversion of traditional assessment into multi-point:

National Assessment	Balls maximum possible valuethis indicator
«5»	185-200
«4»	151-184
«3»	120-150

Points from the discipline are independently converted into both the ECTS scale and the four-point scale. ECTS scale scores are not converted to a four-point scale and vice versa. Further accounts are carried out by the information and computer center of the university.

Conversion of traditional assessment in the discipline and the amount of points on the ECTS scale

Marc ECTS	Statistical indicator
«A»	Top 10% of students
«B»	The next 25% of students
«C»	The next 30% of students
«D»	The next 25% of students
«E»	The last 10% of students

The ECTS scale is given by the ONMedU educational subdivision or the dean's office after ranking the grades in the discipline among students studying in one course and in one specialty. According to the decision of the Academic Council, the ranking of students - citizens of foreign countries is recommended to be carried out in one array

10. Methodological support of the discipline:

Working program of the academic discipline

- Syllabus
- Multimedia presentations
- Methodical developments for practical classes
- Methodical recommendations for independent work of higher education applicants

List of didactic methodological teaching aids

P / p No.	List of technical and didactic teaching aids (DSO), educational equipment	Notes
1.	Multimedia projector	
2.	Presentations of lectures (on electronic media)	
3.	Color images of scarce HRs	
4.	Thematic herbarium collections of the Republic of Lithuania	
5.	Thematic collections of medicinal plant specimens	
6.	Thematic collections of medicinal products based on medicinal	
7.	products	
8.	Microscope	
9.	petri dishes	
10.	Technochemical weights, equilibria	
11.	test tubes	
12.	electric stove	
13.	flasks are different	
14.	different cylinders	
15.	Pestle mortar	
16.	tweezers	
17.	tripods	
18.	Solution bottles	
19.	Chemical reagents	

11. The list of questions to credit

:

1. Nutritional value of drinking water

2. Energy value of water
3. Technology for obtaining drinking water
4. Factors that affect the quality of drinking water
5. Xenobiotics in drinking water
6. Mineral waters, definition, classification, composition, use
7. Compatibility of mineral waters and drugs
8. What is meant by the term "total mineralization"?
9. How are mineral waters classified according to application, chemical composition, total salinity, temperature and pH?
10. What types of mineral waters, depending on the main ions, do you know?
11. Give recommendations on the use of mineral waters.
12. Nutritional value of meat and meat products
13. Energy value of meat and meat products
14. Technology for producing sausages
15. Factors that affect the quality of meat and meat products
16. Xenobiotics of meat and meat products
17. Methods for the determination of nitrates and nitrites in meat and meat products
18. Analysis of lipids in meat and meat products
19. What vitamins are contained in meat and meat products?
20. What is the mineral composition of meat and meat products
21. What method is used to determine the total nitrogen
22. Means for counterfeiting meat and sausages
23. How to determine the freshness of a product by the pH value
24. Sanitary and epidemiological indicators of the quality of meat and meat products
25. Nutritional value of fish and fish products
26. Energy value of fish and fish products
27. Characteristics of fish oil, its composition, chemical, biological and pharmacological properties
28. Factors that affect the quality of fish and fish products
29. Xenobiotics of fish and fish products
30. What compounds of fish and fish products indicate their poor quality
31. Methods for the determination of nitrates and nitrites in fish and fish products
32. Determination of lipids in fish and fish products
33. What vitamins are found in fish and fish products
34. What is the mineral composition of fish and fish products
35. What method is used to determine the total nitrogen
36. How to determine the freshness of the product by the pH value
37. Sanitary and epidemiological indicators of the quality of fish and fish products
38. Nutritional value of bread, bakery products
39. Energy value of bread, bakery products
40. Characteristics of carbohydrates of various types of bread, its composition, chemical, biological and pharmacological properties

List of required practical skills to be mastered.

- determine the total salinity of water;
- determine nitrates and nitrites in meat and meat products.
- be proficient in the technique of determining total nitrogen;
- determine the freshness of the product by the pH value
- to determine lipids in fish and fish products;
- apply thin layer chromatography for raw material analysis;
- use methods to determine the falsification of bread, bakery products;

- Carry out the acceptance of medicinal product and take samples necessary for its analysis, according to the MSC;
- carry out determination of moisture, ash and extractive substances in raw materials by the methods provided by the MSC;
- carry out statistical processing and registration of analysis results.

12. LITERARY SOURCES

Basic

1. Voloshin O.I., Lishak O.V., Okopnyak I.A., Splavsky O.I. Basics of Nutrition. Navchalnyy posibnik. Bukrek. - 2007.-- 280 s
2. Zubar N.M. Fundamentals of physiology and hygienic kharchuvannya... Pidruchnik. - K .: Center of educational literature, 2010.-- 336 p.
3. Tsipriyan V.I., Matasar I.T., Slobodkin V.I. Hygiene Harchuvannya with the Basics of Nutrition. - K .: Medicine, 2007.-- 544 p.
4. Anistratenko T.I., Bilko T.M., Blagodatnova O.V. that in. Hygiene harchuvannya with the basics of nutrition.Pidruchnik. Have 2 books. Edited by prof. V.I. Tsipriyan. - K .: Medicine, 2007.-- 528
5. Dubinina A.A., Malyuk L.P., Selyutina G.A. that in. Toxic speech in food products and methods of... Pidruchnik. - K .: VD "Profesional", 2007. - 384 p.
6. Pavlotska L.F., Dudenko N.V. Fundamentals of physiology, food processing and problems of food safety... Navchalnyy posibnik. - Sumi: VTD "Universitieska kniga", 2007. - 441 p.

Additional:

1. Mogilny M.P., Shlenskaya T.V. Organization of production of healthy food products, principles of healthy eating: recommendations, rules, characteristics. DeLi plus. - 2015 - 179 p.
2. Polyanskaya I.S. Modern pyramid of healthy eating // Actual research and development. - Minsk: World of Science. 2017.S. 41-47.
3. Kondentsova V.M., Vrzhesinskaya O.A. To substantiate the level of fortification with vitamins and minerals of food products of mass consumption. Nutrition issues. 2011. No. 5.
4. Medvedev O.S., Medvedeva N.A. Modern understanding of the possible impact of palm oil on human health. Nutrition issues. - 2016. - No. 1.
5. Pilipenko V.I., Shakhovskaya A.K. Efficiency of using fermented milk products enriched with bifidobacteria and *L. rhamnosus* GG in patients with weakened intestinal motor function. Nutrition issues. - 2011.- No. 3
6. Current trends in nutrition and hygiene research. - 2015. - No. 1.
7. Skalny A.V., Rudakov I.A., Notova S.V., Burtseva T.I., Skalny V.V., Baranova O.V. Fundamentals of Healthy Eating: A Guide to General Nutrition. - Orenburg: GOU OSU, 2005.-- 117 p.

13. Electronic information resources

1. Botany in figures. Text & multimedia lectures [Electronic resource] / TN Gontovaya, VP Rudenko, Ya. S. Kichimasova, V. R. Gaponenko, M. A. Kulagina. - Electron. text, graph. data (1.31 GB). - H .: NUPh, 2012. - 1 electr. wholesale disk (CD-ROM); count system requirements: PC 486 and above; 8 MB RAM; Win 98, WinXP, Win 7; SVGA 32768 and more count. ; 640x480; 4x CD-ROM drive; 16 bits. zv. map. - Disk in a container 18x13 cm.
2. Materials for independent work of applicants for higher education in the discipline "Pharmaceutical Botany", which are posted on the website of the Center for Distance Learning Technologies ONMedU. - Access mode: <https://moodle.odmu.edu.ua/course/view.php?id=257>
3. Official site of the scientific library of ONMedU: <https://onmedu.edu.ua/biblioteka/>
4. Page of methodical work of the department on the site of ONMedU: <https://info.odmu.edu.ua/chair/pharmacognosy/file>