MINISTRY OF HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY
Faculty of Pharmacy
Department of Pharmacognosy and Nutriciology

NUTRICIOLOGY

WORK PROGRAM
of educational component

training for _____the second (master's) level_____

in specialty _____22 Healthcare_____

field of knowledge ____226 Pharmacy, industrial pharmacy_____

of educational program _Pharmacy_____

Kharkiv-2023

The work program of the educational component «Nutriciology» in specialty «226 Pharmacy, industrial pharmacy» educational program «Pharmacy» (4,10д)engl and (4,10д)*engl for applicants for higher education 3 year of study.

EDUCATIONAL COURSE TEAM:
KYSLYCHENKO Viktoriia, head of the Department of Pharmacognosy and Nutriciology, doctor of pharmaceutical sciences, professor;
KRIVORUCHKO Olena, professor of the higher education institution of the Department of Pharmacognosy and Nutriciology of the National University of Pharmacy, Doctor of Pharmacy. Sciences, professor;
TARTYNSKA Ganna, associate professor of the institution of higher education of the Department of Pharmacognosy and Nutriciology of the National University of Pharmacy, candidate of pharmacology. Science, associate professor.

The work program was reviewed and approved at a meeting of the Department of Pharmacognosy and Nutriciology.
Record from September 1, 2023 No. 1.

Head of the Department of
Pharmacognosy and Nutriciology _____ Prof. Viktoria KYSLYCHENKO

The work program was approved at the meeting of the specialized methodical commission for chemical disciplines.
Record from September 5, 2023 No. 1.

Head of Specialized Committee ___ Prof. Victoria GEORGIYANTS

1. Description of the educational component

Language of study: *English*.
Status of the educational component: *selective*.
Prerequisites for studying the educational component: As an educational component "Nutriciology":
- is based on the knowledge acquired by students of higher education while studying the Latin language, botany, organic chemistry, biological chemistry, biophysics, normal and pathological human physiology; pharmacognosy
- lays the foundations for students of higher education to study pharmaceutical and toxicological chemistry, pharmacology, drug technology, perfumery and cosmetic technology, clinical pharmacy, which involves the integration of teaching with these educational components and the formation of skills to apply knowledge of nutriciology with the basics of resource science in the process of further education and in professional activity;
- plays a leading role in solving such urgent problems as the search for creation of effective medicines from natural raw materials, improving the quality of dietary supplement and functional food of vegetable origin;
- prepares future specialists on issues of a scientifically based system of using resources of dietary supplements and practical implementation of the organization of their production of new dietary supplements, developing of methods of control of the them ,

The subject of educational component study «Nutriciology» is dietary supplements, nutritional correction of different diseases.
Information content of the educational component. 4 ECTS credit 120 hours are assigned to the study of the educational component.

2. Objectives and tasks of the educational component

The purpose and task of teaching the educational component «Nutriciology» The purpose of teaching the discipline "Nutriciology" is to understand the main differences between dietary supplements and drugs and build a strategy to prevent competition of dietary supplements with drugs.
The main tasks of the educational component «Nutriticiology» are:
• apply the characteristics of dietary supplements, special foods and functional foods in professional activities;
• apply knowledge of the chemical composition of materials of natural origin, which is part of dietary supplements, special foods and functional foods;
• be able to find potential and new sources of essential nutrients;
• make a conclusion about the quality of raw materials based on the results of pharmacopoeial analysis;
• apply knowledge from clinical trials of parapharmaceuticals;
• creation of special food products for different categories of the population and persons with impaired nutritional status;
• improvement and development of methods for analysis of quality and safety of dietary supplements, special foods and functional foods;
• improving the system of control over the production and sale of dietary supplements, special foods and functional foods;
• creation of recommendations for the optimal doses of biologically active substances in the composition of dietary supplements, special foods and functional foods;
• develop information leaflets, make reports for doctors and provide advice to the public on issues related to dietary supplements, special foods and functional foods,
• generalize regulatory requirements for production, quality parameters and features of circulation of dietary supplements, special foods and functional foods in Ukraine,
• apply different classification approaches to dietary supplements, special foods and functional foods,
• develop classification approaches and methods of commodity analysis for dietary supplements, special foods and functional foods,
• acquisition of skills of rational positioning of dietary supplements, special food products and functional food products in pharmacies and development of algorithms of pharmaceutical care during their release from pharmacies.

3. Competence and planned educational outcomes

Educational component «Nutriciology» ensures the acquisition of applicants for higher education the following **competences**:

integral: the ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements;

general:

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

special (professional):

PC 16. Ability to organize and conduct the procurement of medicinal plant raw materials in accordance with the rules of Good Practice of Cultivation and Collection of Raw Materials of Plant Origin (GACP), as a guarantee of the quality of medicinal plant raw materials and medications based on it. Ability to predict and calculate ways to solve the problem of conservation and protection of thickets of wild medicinal plants, in accordance with current legislation.

PC 20. Ability to develop methods for quality control of medications, including active pharmaceutical ingredients, medicinal plant raw materials and excipients using physical, chemical, physicochemical, biological, microbiological, pharmacotechnological and pharmacoorganoleptic control methods.

Integrative final ***program learning outcomes*** (PLO), the formation of which is facilitated by the educational component «Nutriciology»:

PLO 7. To perform professional activities using creative methods and approaches.

PLO 28. To organize and conduct rational procurement of medicinal plant raw materials. To develop and implement measures for the protection, reproduction and rational use of wild species of medicinal plants.

As a result of studying the discipline, the applicant must:

know:

- methods of realization of knowledge in the decision of practical questions,
- structure and features of professional activity,
- official information and sources in the field of professional activity,
- legal requirements for the rational storage of pharmacy products,
- methods of commodity analysis of pharmacy products,
- legal norms of pharmaceutical activity.

be able to:

- use professional knowledge to solve practical situations,
- carry out professional activities that require updating and integration of knowledge,
- use and cooperate with the official websites of regulatory and regulatory authorities, reference resources, etc.,
- apply professional knowledge to ensure the rational storage of pharmaceutical products,
- to use different commodity approaches at separate stages of circulation of all groups of pharmaceutical goods,
- apply and analyze the legal norms of pharmaceutical activity,

possess:

the recipient of a higher education degree (master's degree) must possess general (GC 6) and special (professional) (PC 16, 20) competencies (*expected learning outcomes*).

4. The educational component structure

Names of content modules and topics	The amount of hours			
	the whole amount	including		
		lecture	practical lessons	self-study
Content module 1. Nutrients in foods. Diet, nutritional status, dietary supplements				
Topic 1. Nutritiology: subject, purpose and tasks. basic terms and concepts of nutrition. The role of nutrition in ensuring the vital processes of the organism.	6,5	0,5	2,0	4,0
Topic 2. Nutrition: modern approaches, principles, recommendations.	10,0	1,0	2,0	7,0
Topic 3. Macro- and micronutrients.	7,5	0,5	2,0	5,0
Topic 4. Nutritional status	3,5	0,5	1,0	2,0
Topic 5. Diet Unconventional (alternative) diet.	11,0	1,0	3,0	7,0
Topic 6. Dietary supplements (DS). Food products for special dietary consumption. Functional foods.	3,5	0,5	1,0	2,0
Topic 7. Ingridients of DS	4,5	0,5	1,0	3,0
Control content module 1.	8,0	-	3,0	5,0
The whole amount of hours for the content module 1	54,5	4,5	15,0	35,0
Content module 2. Nutritional correction of different diseases.				
Topic 9. Nutritional correction for food intolerance and food allegy.	8,5	0,5	2,0	6,0
Topic 10. Nutritional correction for diabetes mellitus	10,0	1,0	3,0	6,0
Topic 11. Nutritional correction for obesity and disorders of GIT.	8,5	0,5	2,0	6,0
Topic 12. Nutritional correction for cardio-vascular diseases	8,5	0,5	2,0	6,0
Topic 13. Nutritional correction for uninary tract diseses	6,5	0,5	2,0	4,0
Topic 14. Nutritional correction for muscular-sceletal system diseases .	7,5	0,5	2,0	5,0
Control content module 2.	7,0	-	2,0	5,0
The whole amount of hours for the content module 2	56,5	3,5	17,0	38,0
Semester credit	9,0	-	2,0	7,0
The whole amount of hours for the course	**120,0**	**8,0**	**32,0**	**80,0**

5. Contents of the educational component

Content module 1.Nutrients, their content in food. Diet, nutritional status, dietary supplements.

Topic 1. Nutrition: subject, purpose and objectives. Basic terms and concepts of nutrition. The role of nutrition in ensuring the vital processes of the body: definition of nutrition as a science and academic discipline; subject, purpose and tasks of nutrition; basic terms and concepts of nutrition: biotics, macro- and micronutrients, essential substances, nutrients, nutraceuticals, parapharmaceuticals, eubiotics, prebiotics, probiotics, synbiotics, xenobiotics, food product, nutrition, diet, balanced nutrition, rational nutrition, complete nutrition products, diet, dietary supplement, functional food product, food supplements, general purpose products, special purpose products.

Topic 2. Nutrition: modern approaches, principles, recommendations. Food product: functions and medical and biological effects of food on the human body. Nutrition: the rules of healthy eating for every day, the principles and laws of nutrition, the rules of eating, the pyramid of healthy eating. Food passions.

Topic 3. Macro- and micronutrients. Macronutrients. Proteins: classification, daily requirement, energy value of proteins. Essential amino acids: factors that affect the use of essential amino acids, conditions that lead to a lack of essential amino acids in the human body. Substitute amino acids. Fats: structure, functions of fats in the human body, symptoms that indicate a lack of fat in the body. ω-3 and ω-6 fatty acids. Carbohydrates: functions, daily intake, foods that are sources of various carbohydrates, conditions in which increased and decreased fiber intake is shown. Water: functions, physiological need of the body for water under normal conditions and changing conditions, the main depots, systems and organs that regulate the maintenance of water balance in the human body, symptoms that characterize the excess and insufficiency of water in the human body, classification of drinking water. Micronutrients.

Food sources of essential micronutrients. Daily need for them. Vitamins: biological activity in the human body; conditions caused by a deficiency and excess of vitamins in the human body. Macro- and microelements: functions in the human body; conditions caused by insufficiency and excess of macro- and microelements in the human body; possible interactions between micronutrients.

Topic 4. Non-traditional (alternative) diets. Vegetarianism: types, allowed and forbidden foods. Raw food diet: types. Characteristics of macrobiotic nutrition: features, permitted and prohibited foods. Features of nutrition in the system of yogis. Separate food diet: basic provisions, approaches to the combination of products. Starvation: types, causes. Characteristics of nutrition in religious practices (Christianity, Islam, Judaism, Hinduism, Buddhism).

Topic 5. Dietary supplements. food products for special dietary consumption. Funtional foods. Concepts: dietary supplement, food product for special dietary consumption (use), functional food product. Regulations governing the quality of dietary supplements, foods for special dietary consumption and functional foods. Classification of dietary supplements according to SPhU. Features of their use. Differences from drugs, food for special dietary consumption and functional food. Definition: probiotic, prebiotic, synbiotic and metabiotic. Features of their composition. Food product for special dietary consumption: examples, features of application. Functional food product: examples, features of application. Daily diet. Nutritional status. Methods for determination of nutritional status.

Content module 2. Nutritional correction of diseases.

Topic 6. Nutritional correction for food intolerance and food allergies. Food allergy: mechanism of action, foods with high, medium and low allergenicity. Elimination diet. Rules of cooking for food allergies. Food intolerance: types (enzymopathy, phenylketonuria, galactosemia, lactase deficiency, celiac disease). Alcohol intolerance. Principles of diet therapy for allergies and food intolerances. Nutritional correction for allergies and food intolerances.

Topic 7. Nutritional correction of diabetes. Diabetes mellitus: causes, main symptoms, types. Diabetic syndrome. The main indicators that determine diabetes. Diet is indicated for diabetes: chemical composition and energy value of the daily diet. Glycemic index of food. Foods with high, medium and low glycemic index. Simple and complex carbohydrates. Bread unit. Diet for patients with diabetes. Nutritional correction for diabetes.

Topic 8. Nutritional correction of obesity and diseases of the gastrointestinal tract. Esophagitis: causes, symptoms, treatment, recommendations for its nutritional correction. Peptic ulcers of the esophagus: causes, symptoms, treatment, recommendations for their nutritional correction. Type B gastritis: causes, symptoms, treatment, recommendations for its nutritional correction. Gastritis type A: causes, symptoms, treatment, recommendations for its nutritional correction. Reflux: causes, symptoms, treatment, recommendations for its nutritional correction. Chronic pancreatitis: causes, symptoms, treatment, recommendations for its nutritional correction. Gallstone disease: causes, symptoms, treatment, recommendations for its nutritional correction. Acute pancreatitis: causes, symptoms, treatment, recommendations for its nutritional correction. Dyskinesia of the biliary tract: causes, symptoms, treatment, recommendations for its nutritional correction. Cirrhosis of the liver: causes, symptoms, treatment, recommendations for its nutritional correction. Gastric ulcer: causes, symptoms, treatment, recommendations for its nutritional correction. Chronic enterocolitis: causes, symptoms, treatment, recommendations for its nutritional correction. Botkin's disease: causes, symptoms, treatment, recommendations for its nutritional correction. Intestinal dysbacteriosis: causes, symptoms, treatment, recommendations for its nutritional correction. Chronic cholecystitis: causes, symptoms, treatment, recommendations for its nutritional correction. Describe numbered diets for type B gastritis, type A gastritis, intestinal dysbacteriosis, hepatitis A, biliary dyskinesia, gastric ulcer, liver cirrhosis, chronic pancreatitis, chronic enterocolitis, biliary stone disease, chronic cholecystitis, chronic cholecystitis. Stimulants of intestinal motility, nutrients that inhibit intestinal motility. Nutritional correction in diseases of the gastrointestinal tract.

Topic 9. Nutritional correction of diseases of the cardiovascular system. Diseases of the cardiovascular system: atherosclerosis, hypertension, chronic heart failure, coronary heart disease. Causes, symptoms, treatment. Nutritional correction of cardiovascular system’s diseases.

Topic 10. Nutritional correction of urinary system’s diseases. Diseases of the urinary system: nephritis, urolithiasis. Causes, symptoms, treatment. Nutritional correction in diseases of the urinary system.

Topic 11. Nutritional correction of musculoskeletal system’s diseases. Diseases of the musculoskeletal system:

osteoarthritis, rheumatoid arthritis, osteoporosis, gout. Causes, symptoms, treatment. Nutritional correction musculoskeletal system's diseases.

Semester credit from the module 1

6. Topics of lectures

№	Name of topic	The amount of hours
1.	Nutrition: subject, purpose and tasks. basic terms and concepts of nutrition. The role of nutrition in ensuring the vital processes of the organism.	0,5
2.	Nutrition: modern approaches, principles, recommendations.	1,0
3.	Macro-micronutrients.	1,0
4.	Unconventional (alternative) diet.	1,0
5.	Dietary supplements. Food products for special dietary consumption. Functional foods.	1,0
6.	Nutritional correction for food intolerance and food allergies.	0,5
7.	Nutritional correction for diabetis.	1,0
8.	Nutritional correction of obesity and diseases of the gastrointestinal tract.	0,5
9.	Nutritional correction of diseases of the cardiovascular system.	0,5
10.	Nutritional correction of diseases of the urinary system.	0,5
11.	Nutritional correction of diseases of the musculoskeletal system.	0,5
	The whole amount of hours	**8,0**

7. Topics of seminars

Not provided for in the working curriculum.

8. Topics of practical lessons

№	Name of topic	The amount of hours
1.	Nutrition: subject, purpose and tasks. basic terms and concepts of nutrition. The role of nutrition in ensuring the vital processes of the organism.	2,0
2.	Nutrition: modern approaches, principles, recommendations.	2,0
3.	Macro-micronutrients.	3,0
4.	Unconventional (alternative) diet.	3,0
5.	Dietary supplements. Food products for special dietary consumption. Functional foods.	2,0
6.	**Control content module 1**	3,0
7	Nutritional correction for food intolerance and food allergies.	2,0
8	Nutritional correction for diabetis.	3,0
9	Nutritional correction of obesity and diseases of the gastrointestinal tract.	2,0
10	Nutritional correction of diseases of the cardiovascular system.	2,0
11	Nutritional correction of diseases of the urinary system.	2,0
12	Nutritional correction of diseases of the musculoskeletal system.	2,0
13	**Control content module 2**	2,0
14	**Semester module supervision**	2,0
	The whole amount of hours	**32,0**

9. Topics of laboratorial lessons

Not provided for in the working curriculum.

10. Self-study work

№	Name of topic	The amount of hours
1.	Nutrition: subject, purpose and tasks. basic terms and concepts of nutrition. The role of nutrition in ensuring the vital processes of the organism.	4,0
2.	Nutrition: modern approaches, principles, recommendations.	7,0
3.	Macro-micronutrients.	7,0
4.	Unconventional (alternative) diet.	7,0
5.	Dietary supplements. Food products for special dietary consumption. Functional foods.	5,0
6.	**Control content module 1**	5,0
7.	Nutritional correction for food intolerance and food allergies.	6,0
8.	Nutritional correction for diabetis.	6,0
9.	Nutritional correction of obesity and diseases of the gastrointestinal tract.	6,0
10.	Nutritional correction of diseases of the cardiovascular system.	6,0
11.	Nutritional correction of diseases of the urinary system.	4,0
12.	Nutritional correction of diseases of the musculoskeletal system.	5,0
13.	**Control content module 2**	5,0
14.	**Semester module supervision**	7,0
	The whole amount of hours	**80,0**

Tasks for Self-study work

1. Types of food and the Biological Effect of Food
2. The Biological effect of food
3. Food - as a complicated pharmacological complex.
4. Pathogenetic action of food in diseases.
5. Give the definition of "food additives", classification and functions.
6. Chemical structure of proteins, their varieties, physico-chemical properties
7. Chemical structure of lipids, their varieties, physico-chemical properties
8. The chemical structure of simple carbohydrates, their varieties, physico-chemical properties
9. Chemical structure of complex carbohydrates, their varieties, physico-chemical properties
10. The chemical structure of vitamins, their varieties, physico-chemical properties
11. Chemical structure of essential nutrients, their varieties, physico-chemical properties
12. General characteristics of therapeutic diets.
13. Principles of formulation therapeutic diets.
14. General characteristics of the therapeutic diets for gastrointestinal diseases
15. General characteristics of the therapeutic diet for cardiovascular diseases
16. General characteristics of a therapeutic diet for diseases of the urinary system
17. General characteristics of a therapeutic diet in diseases of the musculoskeletal system
18. General characteristics of the therapeutic diet for allergies
19. General characteristics of a therapeutic diet with food in interaction
20. General characteristics of a therapeutic diet for endocrine diseases
21. How to develop a critical attitude towards DS.
22. What are the quality requirements for DS in the EU and the USA and in Ukraine.
23. Give a description of the following ingredients DS: lecithin, chitosan, chondroitin sulfate, glucosamine, succinic acid, betaine, taurine, indole-3 carbinol, chlorophyll, resveratrol, carnitine, ornithine, bee products: honey, propolis, bee pollen, royal jelly; lady's mantle, dropwort flower, the leaves of Ginkgo biloba, hibiscus flowers, lovage roots, herb Centella, an ash-tree, the rhizome with the roots of angelica, a bulb of garlic, Hypericum herb, thallus tsetrarii, husk isfaguly, mullein flowers, the fruits of Saw palmetto, the bark of the African plum, olives, bark of Garcinia, garpagafituum roots, rhizome of tsimitsifuga, herb of agrimony, rhizome of cinquefoil white, rhizome of couch herb, stevia, rhizome of sabelnik, root of comfrey, mistletoe, rhizome of ginger, clover herb, soybean seeds, milk Thistle

fruits, juniper fruit, goat's-rue herb, spirulina, chlorella, shiitake, reishi, brewer's yeast, Jew's Tar. Specify the chemical composition and indications for use of these ingredients.
24. What ingredients are not allowed to include in DS
25. What ingredients DS occupy a leading position in the pharmaceutical market and why. Prove the answer.
26. What categories of the population primarily need the use of DS.
27. Rules that pharmacist should observe when he advise the use of DS.
28. Diseases of malnutrition.
29. Diseases caused by lack of protein intake.
30. Diseases caused by lack of fat intake
31. Diseases caused by lack of carbohydrate intake.
32. Diseases caused by lack of vitamin intake.
33. Diseases caused by lack of consumption of elements
34. Diseases caused by excess protein intake.
35. Diseases caused by excess fat intake.
36. Diseases caused by excess carbohydrate intake.
37. Diseases caused by excess intake of vitamins.
38. Diseases caused by excess consumption of minerals
39. Describe the concept of shugar substitutes and sweeteners.
2. Chemical structure, physico-chemical and pharmacological properties of fructose
40. Chemical structure, physico-chemical and pharmacological properties of sorbitol
41. Chemical structure, physico-chemical and pharmacological properties of xylite
42. Chemical structure, physico-chemical and pharmacological properties of saccharin
43. Chemical structure, physico-chemical and pharmacological properties of aspartame
44. Chemical structure, physico-chemical and pharmacological properties of acesulfame
45. Chemical structure, physico-chemical and pharmacological properties of cyclamate
46. Chemical structure, physico-chemical and pharmacological properties of stevioside
47. Give the advantages and disadvantages of each ingredient from these shugar substitutes.
48. What is obesity?
49. What diseases are provoked by obesity?
50. Describe the abdominal type of obesity.
51. Describe the gluteo-femoral type of obesity.
52. Indicate the causes of obesity.
53. Specify preventive and therapeutic treatment for obesity.
54. List the basic principles of obesity treatment.
55. Describe the daily diet for obesity.
56. What is anorexia? Describe the disease.
57. What is bulimia? Describe the disease.
58. What is cellulitis? Characterize it.
59. Principles of diet therapy for obesity.
60. DS-ingredients for the treatment of obesity.
61. Obesity, frequency and influence on life expectancy.
62. The main sources of cholesterol among food products.
63. Major sources of sodium among food products.
64. Biochemical indicators for cardiovascular diseases
65. General recommendations regarding the behavior of the patient with various types of cardiovascular disease.
66. Give the definition of the nephritis (acute and chronic), etiology, symptoms and diet therapy.
67. Give the definition of the pyelonephritis (acute and chronic), etiology, symptoms and diet therapy.
68. Give the definition of the concept of glomerulonephritis, etiology, symptoms and diet therapy.
69. Give the definition of the urolithiasis, etiology, symptoms and diet therapy.
70. Give the definition of the renal failure (acute and chronic), etiology, symptoms and diet therapy.

71. Give the definition of the metabolic acidosis, etiology, symptoms and diet therapy.
72. Give the definition of the kidney disease, etiology, symptoms and diet therapy.
73. Give the definition of the amyloidosis, etiology, symptoms and diet therapy.
74. Give the definition of the cystitis (acute, chronic), etiology, symptoms and diet therapy.
75. Composition of dietary supplements for the prevention and / or treatment diseases of the urinary system.
76. The composition of the ingredients of dietary supplements for the treatment and / or prevention diseases of the musculoskeletal system.
77. Diet therapy and preventive diet therapy of gout disease.
78. What ingredients of DS are indicated for diseases of the musculoskeletal system?
79. What ingredients of DS are indicated for diseases of the urinary system?

11. Criteria and evaluation order of educational outcome

Scheme of accrual and distribution of points for full-time higher education applicants

<table>
<tr><td colspan="9">Current testing and independent work
Content module 1</td><td>Total</td></tr>
<tr><td colspan="4">Content module 1</td><td colspan="5">Content module 2</td><td rowspan="3">60-100</td></tr>
<tr><td>T1-2</td><td>T3</td><td>T4-7</td><td>CM1
T 1-7</td><td>T9-10</td><td>T11</td><td>T12-13</td><td>T14</td><td>CM2
T9-14</td></tr>
<tr><td>2-4</td><td>2-4</td><td>2-4</td><td>24-38</td><td>2-4</td><td>2-4</td><td>2-4</td><td>2-4</td><td>22-34</td></tr>
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Criteria for assessing the knowledge and skills of higher education graduates from the discipline "Nutritionology" are developed in accordance with the "Regulations on the procedure for assessing students' knowledge in the credit-module organization of the educational process at the NPhU.

Assessment of the student's progress in the discipline is a rating, exhibited on a stoical scale and has a definition for the ECTS system and according to the traditional scale adopted in Ukraine.

The grade from the discipline is defined as the average of the grades for the module on which the structured academic discipline is structured.

Assessment of the current academic activity (conducted during each class) -Performance control, theoretical knowledge, practical skills and abilities. When mastering each topic of content modules for the current educational activity, students are awarded points for all activities that at the end of studying the content module are summed up.

Assessments (in points) are reflected in the calendar and thematic plans of practical and seminar classes.

The number of points that a student receives at a class is from 2.0 to 4.0 points.

Criteria	**points**
Theoretical training: - showed comprehensive and profound knowledge of the theoretical material in the textbook, lectures and additional literature: basics of rational nutrition, species, classification of macro and micronutrients, nutritional status and individual methods of determination, principles and provisions governing the quality of dietary supplements, sources and methods of their obtaining, methods for establishing the structure and identification of dietary supplements and their ingredients; nutritional correction of food allergy, etiology and pathogenesis, has made an elimination diet depending on the type of food intolerance and food allergy; nutritional correction of diseases of organs of the gastrointestinal tract, obesity and diabetes mellitus, etiology and pathogenesis, flawlessly developed a diet in these pathologies, nutritional correction of diseases of the cardiovascular system, musculoskeletal system, and organs of the urinary system, called the etiology and pathogenesis of these diseases, the ways of nutritional correction on number of pharmacotherapy, the impact of food on the etiology of these diseases; - replied fully, reasonably, logically on the main and additional questions of discipline; - perfectly fulfilled a written task; - mastered the material, which is made on independent study;	4

Practical training: - correctly selected the appropriate equipment, chemical utensils and reagents; - without mistakes, conducted (depending on the topic) the identification of the ingredients of dietary supplements; - correctly and without mistakes made anthropometric ways of determining the food status; - Has mastered modern programs for the preparation of individual diets and determination of caloric content and chemical composition of a diet - skillfully performed calculations of the chemical composition of diets, depending on diseases of organs or systems of the organism; - - passed to the teacher to check the faultlessly designed journal; - acquired skills in solving situational tasks performed on an independent work;	
Theoretical training: - showed complete knowledge of the theoretical material contained in the textbook, the text of the lecture and additional literature: the basis of rational nutrition, species, classification of macro and micronutrients, nutritional status and individual methods of determination, principles and provisions governing the quality of dietary supplements, sources and methods their reception, methods for establishing the structure and identification of dietary supplements and their ingredients; nutritional correction of food allergy, etiology and pathogenesis, has made an elimination diet depending on the type of food intolerance and food allergy; nutritional correction of diseases of the organs of the gastrointestinal tract, obesity and diabetes mellitus, etiology and pathogenesis, formed a diet in these pathologies, nutritional correction of diseases of the cardiovascular system, musculoskeletal system, and organs of the urinary system, called the etiology and pathogenesis of these diseases, the ways of nutritional correction on a number with pharmacotherapy, the effect of food on the etiology of these diseases; - making minor mistakes, inaccuracies corrected after the teacher's remarks on the main and additional issues of discipline; - fulfilled the written task more than half. - mastered the material, which is made on the independent study is not in full **Practical training:** - made minor mistakes in selecting the appropriate equipment, chemical dishes and reagents; - without mistakes, conducted (depending on the topic) the identification of the ingredients of dietary supplements; - correctly and without mistakes made anthropometric ways of determining the food status; - Has mastered modern programs for the preparation of individual diets and determination of caloric content and chemical composition of a diet, but made minor mistakes; - made calculations of the chemical composition of diets, depending on diseases of organs or systems of the organism; - - passed to the teacher to check the not-completed journal; - acquired skills in solving situational tasks performed on independent work;	3
Theoretical training: - showed the knowledge of theoretical material on the subject in the amount that is considered necessary and sufficient for the practical part of the study: the basis of rational nutrition, species, classification of macro and micronutrients, nutritional status and individual methods of determination, principles and regulations governing the quality of dietary supplements, sources and methods of their obtaining, methods for establishing the structure and identification of dietary supplements and their ingredients; Nutritional correction of food allergy, did not name the etiology and pathogenesis, with errors made an elimination diet depending on the type of food intolerance and food allergy; nutritional correction of diseases of the organs of the digestive tract, obesity and diabetes, did not name the etiology and pathogenesis, mistakenly formed the diet in these pathologies, nutritional correction of diseases of the organs of the cardiovascular system, musculoskeletal system, and organs of the urinary	2

system, did not name the etiology and pathogenesis of the data diseases, with errors determined the ways of nutritional correction in a row with pharmacotherapy, the impact of food on the etiology of these diseases-gave an answer to the teacher's theoretical problems with errors. - fulfilled the written task of making errors in the formulation of conclusion**s** **Practical training:** - making significant mistakes in selecting the appropriate equipment, chemical utensils and reagents; - made significant mistakes in the implementation (depending on the topic) identification of the ingredients of dietary supplements; - not fully mastered modern programs for the preparation of individual diets and the determination of caloric content and chemical composition of the diet; - made calculations of the chemical composition of diets, depending on the diseases of organs or systems of the body, but errors occurred; - - passed the teacher to check the logbook is not issued; - Has not acquired skills in solving situational tasks performed on independent work;	
Theoretical training: - did not get acquainted with the theoretical material contained in the textbook, the text of the lecture and additional literature. - knowledge is not systematic, fragmentary. The answers are rude, fundamental errors. - did not answer the teacher's theoretical questions - did not fulfill a written task. **Practical training**: - did not fulfill a practical task or made gross mistakes (depending on the topic); - have not mastered modern programs for the preparation of individual diets and determination of caloric content and chemical composition of a diet; - Can not count the chemical composition of the diet depending on diseases of organs or systems of the organism; - did not pass the laboratory journal to the teacher for checking.	0-1

In the case when the student appeared for classes not prepared, should attend the class. After working with the textbook and an individual conversation with the teacher, the subject of the lesson is allowed for practical work.
At the Department of Pharmacognosy and Nutriciology, in the absence of an occupation, for any reason (respectable or disrespectful), students must complete the classes in full, in the presence of admission from the dean's office to their or a regular teacher by the schedule of the department in a free audience.

12. Forms of progress and semester supervision of academic achievements

Current control of theoretical and practical knowledge in the form of an oral, written and test survey using standardized methods for diagnosing knowledge, abilities and skills is carried out at each laboratory session in accordance with the specific goals of the topic and during the individual work of the teacher for topics that are not included in the structure of the lesson and are developed by the student of higher education independently.
Control of content modules - control of theoretical knowledge in the form of an oral, written and test survey of applicants for higher education, as well as practical skills in determining the identity and benignity of MPM. Control refers to knowledge and skills, both acquired in classes, and objects and topics developed independently by students of higher education.
When *studying the educational component* «Nutriciology», students of higher education take a semester exam. The exam on pharmacognosy with the basics of resource science is conducted in written form during the exam session, according to the schedule.
Form of control - semester credit.

13. Methodological support

1. Curriculum of the educational component.
2. Work program of the educational component.
3. Calendar and thematic plans of lectures and practical classes
4. Materials of computer presentations of lectures.
5. Methodical recommendations for practical classes, as well as independent work of students of higher education.
6. A list of theoretical questions for independent work of students of higher education.
7. List of questions and tasks for current control of knowledge and skills of higher education applicants.
8. Workbook on nutriciology / Natalya V. Popova, Viktiria S. Kyslychenko, Ganna S. Tartynska. Publishing house NUPh, 2021. 37 p.

14. Reading suggestions

The main reading suggestions

1. Lecture notes on nutriciology / Попова Н.В., Очкур А. В., Казаков Г.П., Ковалёв С.В., Алфёрова Д.А. Х.: НФаУ,2018. 120 с.
2. Dietary Supplements Compendium: 1st edition. – The United States Pharmacopeial Convention. – Rockville, MD. – 2009. – 1836 p.
3. Dietary Supplements of Plant Origin. A nutrition and health approach / Edited by M. Maffei. – Taylor & Fransis Ltd. – London, New York. – 2003. – 242 p.
4. Food Lipids. Chemistry, nutrition, and biotechnology: 2nd edition, rev. and exp. / Edited by C.C. Akoh and D.B. Min. – Marcel Deccer, Inc. - New York. – 2002. – 1014 p.
5. Herbal Products. Toxicology and clinical pharmacology: 2nd edition. / Edited by T.S. Tracy and R.L. Kingston. – Humana Press. – Totowa, New Jersey. – 2007. – 300 p.

Supplementary reading suggestions

1. Phytochemicals as bioactive agents / Edited by W.R. Bidlack, S.T. Omaye, M.S. Meskin, D.K.W. Topham. - Boca Raton, Florida. - 2000. – 296 p.
2. The Oxford Book of Health Foods. A comprehensive guide to natural remedies / J.G. Vaughan, P.A. Judd. – Oxford University Press. - New York. – 2006. – 223 p.

7. Electronic resources, including the Internet

1. Website of the Department of Pharmacognosy and Nutriciology – www.cnc.nuph.edu.ua
2. Website of the NUPh library – http://lib.nuph.edu.ua
3. Electronic archive of the NUPh – http://dspace.nuph.edu.ua
4. Center for Distance Technologies of the National Academy of Sciences of Ukraine – pharmel.Kharkiv.edu
5. NUPh. Online tests – http://tests.nuph.edu.ua
6. Vernadsky National Library of Ukraine – http://www.nbuv.gov.ua
7. V.G. Korolenko Kharkiv State Scientific Library – http://korolenko.kharkov.com