МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
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METHODICAL RECOMMENDATIONS ON THE ORGANIZATION OF THE INDEPENDENT WORK OF STUDENTS OF THE DISCIPLINE «ПИЩЕВЫЕ И БИОЛОГИЧЕСКИ АКТИВНЫЕ ДОБАВКИ / FOOD AND BIOLOGICALLY ACTIVE ADDITIVES»

(ЭЛЕКТРОННЫЙ ДОКУМЕНТ)

Pyatigorsk, 2021

Methodical instructions are intended for students at independent work on the subject " Food and biologically active additives" direction of training: 19.03.04 products Technology and catering.
Training profile: Restaurant Management. Graduate qualification: bachelor

The guidelines contain the necessary theoretical material on the topic under study, tasks for the work, a list of recommended literature.

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Methodical instructions are considered and approved at the meeting of the Department of food technology merchandising

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CONTENT

INTRODUCTION

The study of the course "Food and biologically active additives" determines a large amount of independent work of students: the study of theoretical material, work with normative documents of production technology and catering, reading additional literature, answering questions for self-examination, preparation for classes.

The educational program of the academic bachelor's degree is focused on the training of managers of public catering enterprises, employees engaged in research and analytical activities. The program prepares specialists for professional work as a manager in the restaurant industry and catering enterprises, retail chains selling ready-made culinary products, inspection services for quality control and certification of food raw materials, in design and trade organizations for the implementation of trade-technological and refrigeration equipment, in food technology laboratories, as well as as pedagogical and administrative workers in primary and secondary professional educational institutions.

1. Goals and objectives of the discipline "food and biologically active additives" is the acquisition of theoretical knowledge and practical skills by students to establish and determine priorities in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production; to choose technical means and technologies taking into account the environmental consequences of their application.

the purpose of the discipline "food and biologically active additives" is the formation of:

* to establish and determine priorities in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production;

* to choose technical means and technologies taking into account environmental consequences of their application

* the ability to organize the production of healthy food products for different categories of citizens on a scientific basis, to assess the results of their activities with a high degree of independence, to master the skills of independent work.

The objectives of the development of the discipline "food and biologically active additives" is the formation of knowledge, skills in the following areas of activity:

* to form a professional culture in the field of nutrition, which is understood as the ability to use in professional activities the knowledge of the science of nutrition, the importance of the appointment of food and biologically active additives for the body, modern approaches to the organization of food production;

* to give students theoretical knowledge, to form skills in the field of production and assessment of food quality using food additives and biologically active substances;

* to acquire knowledge and practical skills in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production; to choose technical means and technologies taking into account the environmental consequences of their application

* to form the ability to self-organization and self-education, to master the necessary sections of technology and technology of food products, necessary for solving research and production tasks in the field of production.

As a result of mastering the discipline the student must:

1. General characteristics of independent work of the student in the study of the discipline " food and biologically active additives »

Independent work of the student (srs) along with classroom is one of the forms of the educational process and is an essential part of it. Srs is the planned work of students, performed on the instructions and with the methodical guidance of the teacher, but without his direct participation.

Independent work of students is understood as planned educational, research, and research work of students, which is carried out outside the classroom on the initiative of the student or on the instructions and guidance of the teacher, but without his direct participation.

In the course of independent work of students in the study of the discipline "food and biologically active additives" the following professional competencies and their components are formed:

Код	Формулировка:
GC-5	ability to communicate orally and in writing in Russian and foreign languages to solve problems of interpersonal and intercultural interaction
GPC-2	ability to develop measures to improve the technological processes of food production for various purposes
PC-4	readiness to establish and determine priorities in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production; to choose technical means and technologies taking into account the environmental consequences of their application

As a result of independent work the student should:

Know: priorities in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production

To be able: to choose technical means and technologies taking into account ecological consequences of their application

Possess: willingness to set and determine priorities in the field of food production, to justify the adoption of a specific technical decision in the development of new technological processes of food production; to choose technical means and technologies taking into account the environmental consequences of their application.

2. Schedule of independent work

At the first stage it is necessary to get acquainted with the working program of the discipline, which considers the content of the discipline of the lecture course, the relationship of the lectures with practical classes, topics and types of independent work. For each type of independent work, certain forms of reporting are provided.

Technological map of independent work of the student

Code realizable competences	variety of students activities	The final product of independent work	Means and technologies assessments	Volume of hours, including		
				IWS	Contact information work with teacher	**Total**
5 term						
GC-5 GPC-2 PC-4	Preparation for laboratory classes	Отчет по лабораторным работам	Interviewing	3,64	0,41	4,05
	Preparation for lectures	Abstract	Interviewing	2,43	0,27	2,7
	Implementation of individual research projects	Текст научного проекта	Interviewing	1,57	0,18	1,75
	Study of literature on themes 1-9	Abstract	Interviewing	4,5	0,5	5
			Total	**12,14**	**1,36**	**13,5**
			Total			**13,5**

Formation of competences and their parts by the following technologies:

Independent study of literature during the semester, preparation of a written report on laboratory work, independent preparation of a creative project.

5 semester:

1. Independent study of literature during the semester on topics 1-9.

Goals and objectives – preparation for the interview, collection and design of material for the implementation of the creative project.

2. Preparation of a written report on laboratory work.

Goals and objectives-preparation for laboratory work: writing a written report, preparation of an oral report, consolidation of theoretical material on topics through an interview.

3. Preparation of the creative project.

Goals and objectives-preparation for research work in the direction of scientific justification of food production: writing a written report, preparing an oral report,

preparing a presentation of the collected material. Consolidation of theoretical material on topics through interviews.

Formation of competences and their parts by the following technologies:

Independent study of literature during the semester, preparation of a written report on laboratory work, independent preparation of a creative project.

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1. Independent study of literature during the semester on topics 1-9.

Goals and objectives – preparation for the interview, collection and design of material for the implementation of the creative project.

2. Preparation of a written report on laboratory work.

Goals and objectives-preparation for laboratory work: writing a written report, preparation of an oral report, consolidation of theoretical material on topics through an interview.

3. Preparation of the creative project.

Goals and objectives-preparation for research work in the direction of scientific justification of food production: writing a written report, preparing an oral report, preparing a presentation of the collected material. Consolidation of theoretical material on topics through interviews.

Description of the rating scale

Within the framework of the rating system, students' progress in each discipline is assessed in the course of ongoing monitoring and intermediate certification.

Current control

№	Type of activity of students	terms of implementation	amount of points
5 semester			
	Interview on themes 1-4	8 week	30
	Interview on themes 5-9	14 week	25

	Total		**55**

The maximum possible score for the entire current control is set equal to 55. The current control measure is considered «pass» if a student got not less than 60% of the established maximum score. Rating score applied to the student for the current control measure, passed by a student on control activities schedule, is defined as follows:

Level of control task completion	**Rating score**
Excellent	**100**
Good	**80**
Satisfactory	**60**
Unsatisfactory	**0**

Intermediate attestation in the form of credit

The procedure of credit (differential credit) as a separate control measure is not carried out, the evaluation of the student's knowledge is based on the results of the current control.

The offset is set according to the results of the work in the semester, when all the control points provided by the current control of progress are passed. If on the basis of the semester the student has from 33 to 60 points, he is marked as "credited". The trainee, who has less than 33 points on the basis of the semester, is marked "not credited".

The number of points for credit ($У_{cr}$) with different rating points for the discipline on the results of work in the semester

Rating score for the discipline on the results of work in the semester (K_{sem})	**The number of points for the credit ($У_{cred}$)**
50</r$_{sem}$,<60	**40**
39 < K_{sem}< 50	**35**
33 < K_{sem} < 39	**27**
Psem< **33**	**0**

Methodological materials defining procedures for assessing knowledge, skills, and (or) experience of activities that characterize the stages of forming competences

Admission to practical classes takes place when there is a summary of the relevant lecture and a summary of independently studied literature on the topic. To the practical lesson, the student must prepare answers to questions, perform tasks on the topic of the lesson.

The student receives the maximum number of points if he actively participates in the work, owns the material, knows how to logically and clearly express thoughts, creatively approaches the solution of the main issues of the topic, shows the independence of thinking.

The reason for the decrease in the evaluation are:

- poor knowledge of the topic and basic terminology;
- inactivity of participation in group work;
- lack of the ability to apply theoretical knowledge to solve practical problems;
- untimely submission of work performed.

Criteria for evaluating the results of independent work are given in the Fund for Evaluation Means for Discipline.

Methodical instructions for students to learn the discipline

At the first stage it is necessary to get acquainted with the work program of the discipline in which the content of the topics of practical exercises, themes and types of independent work is considered. For each type of independent work, certain forms of reporting are provided.

To successfully master the discipline, you must perform the following types of independent work, using the recommended sources of information

№	Types of independent work	Recommended sources of information (source)			
		Basic	Additional	Methodical	Internet resources
1	Self-study of literature on the theme № 1-9	1-2	1-2	1-2	1-3

Interview questions
Basic level

5 semester:

Theme 1. Classification of food additives. Regulatory framework in the field of food additives.

1. Food additive. General information
2. Classification of food additives
3. Hygienic regulation of food additives in products
4. foods.
5. Procedure for establishing the safety of food additives.
6. General approaches to the selection and use of food additives.
7. Safety requirements for food additives, flavorings, technological AIDS, as well as their use in the production of public catering products.
8. General provision and scope of application.
9. Basic provisions of hygienic requirements for the use of food additives.
10. Technical regulation of the Customs Union TR CU 021/2011 "on food safety".

Theme 2. Substances that improve the color of products.

1. What hygienic requirements for the use of food dyes are regulated by the current SanPiN.
2. What substances do not belong to food dyes.
3. In some cases, dyes can be used for other purposes.
4. Dyes natural and artificial, technological properties, examples, safety Classification of food dyes.
5. Classification of food dyes.
6. Natural and identical to natural dyes.
7. Technological features of the use of dyes.
8. Technological features of use in food production.
9. Natural and identical to natural dyes. Technological features of use.
10. Color correction and whitening materials.

11. Technological features of the use of dyes in the production of baby food.
12. The use of color stabilizers (fixators) in food production.
13. What is the essence of darkening peeled vegetables and fruits when stored in a purified state?
14. What are the ways to protect peeled vegetables and fruits from darkening?
15. What color-regulating substances do you know?
16. Explain the essence of the method for determining the residual content of sulfur dioxide.
17. Application of bleach in food production.

Theme 3. Substances that change the structure and physico-chemical properties of food.
1. List the groups of substances that regulate the consistency of products.
2. Substances that change the structure and physico-chemical properties of food products:
3. Thickeners, technological features of the use of substances
4. Gelling agents, technological features of the use of substances
5. Modified starches, technological features of the use of substances
6. Pectins, technological features of the use of substances
7. Polysaccharides of marine plants, technological features of the use of substances.
8. The main technological function of thickener, gelling agents. technological features of the use of substances.
9. Application of thickeners and gelling agents in food technologies.
10. Technological features of the use of substances that change the structure and physico-chemical properties of food products in food production.
11. Use of pectins as food additives.
12. Characteristics of pectin-containing plant raw materials.
13. Physical and chemical properties of pectin substances and their use in the production process

Theme 4. Substances that affect the taste and aroma of food.
1. To characterize the substances that affect the taste and aroma of food.
2. Flavors, essential oils and extracts.
3. To characterize the flavor enhancers and aroma. Use in food production.
4. What is the practical value of food flavors?
5. In what cases is not allowed the use of flavors in food?
6. What are the requirements for food flavors?
7. How are flavors classified?
8. What are the main ways to obtain food flavors?
9. How is the selection of flavors for use in food products?
10. How are food flavors stored and transported?
11. What indicators are used to assess the quality and safety of food flavors?

Theme 5. Substances that help to increase the shelf life of food.

1. Classification of sweet substances. Use in food production.
2. Characteristics of substances that affect the taste of food.
3. Natural sweeteners and sugary starches.
4. Intense sweeteners. Use in food production.
5. Sugar substitute. Use in food production.
6. The use of sweeteners in food production.
7. Technological features of the use of sweeteners in food production

Theme 6. Substances that accelerate and facilitate the conduct of technological processes.

1. Food additives that slow microbial and oxidative damage of food raw materials and finished products.
2. Preservatives, technological features of use, safety in food production.
3. Food antioxidants technological features of use, ensuring safety in the production of food.
4. Technological features of application of preservatives and antioxidants in food production.
5. Antioxidants and protective gases, technological features of use.
6. Seals, technological features of use.
7. Moisture-retaining agents, technological features of use.
8. Anti-tracking agents, technological features of use.
9. Film formers, technological features of use.

Theme 7. Substances that accelerate and facilitate the conduct of technological processes-technological additives.

1. Defoamers, anti-foaming agents. Their role in technological processes.
2. Catalysts of hydrolysis and inversion. Their role in technological processes.
3. Clarifiers (adsorbents, flocculants). Their role in technological processes.
4. Substances that facilitate filtering. Their role in technological processes.
5. Carriers, solvents, thinners. Their role in technological processes.
6. Means for tableting. Their role in technological processes.
7. Separators. Their role in technological processes.
8. Dehumidifiers. Their role in technological processes.
9. Means for removing the skin (with fruit). Their role in technological processes.
10. Coolers, cooling and freezing agents. Their role in technological processes.
11. Emulsifying salts. Their role in technological processes.
12. Propellants. Their role in technological processes.
13. Catalysts. Their role in technological processes.

Theme 8. Biologically active additive. Biologically active additive.

1. What is the functional role of dietary SUPPLEMENTS for the human body?
2. List the basic requirements for the list of information submitted to the labeling of dietary SUPPLEMENTS.
3. Features storage BAD.

4. What conditions must be observed when transporting dietary SUPPLEMENTS?
5. Requirements for the implementation of dietary SUPPLEMENTS. Dietary SUPPLEMENTS, definition, characteristics, method of application.
6. Rationale for the use of dietary SUPPLEMENTS in the modern diet.
7. Regulatory and legal issues of dietary SUPPLEMENTS to food.
8. Nutraceuticals, eubiotics, parapharmaceuticals, their definition and functions.
9. The main differences between BAD parapharmaceuticals from nutraceuticals and drugs.

Theme 9. The use of food additives in the production of public catering products.
1. Dry confectionery mixtures. Application. Technological features of application.
2. Dry mixes for bakery production. Application. Technological features of application.
3. The use of food additives in molecular cuisine. Application. Technological features of application.
4. The use of food additives in the production of desserts. Application. Technological features of application.

Advanced level

5 semester:

Theme 1. Classification of food additives. Regulatory framework in the field of food additives.
1. Safety requirements to food additives, the flavorings, and technological AIDS. Use in the production of public catering products.
2. Original cuisine. Sanpin2. 3. 2. 1293-03 position and scope of application in the production of public catering products.
3. Original cuisine. Technical regulation of the Customs Union TR CU 021/2011 "on food safety". position and scope of application in the production of public catering products.

Theme 2. Substances that improve the color of products.
1. What are the hygienic requirements for the use of food dyes in public catering, regulated by the current SanPiN.
2. Natural and identical to natural dyes. The use of technology for the production of special purpose products
3. Technological features of the use of dyes in public catering.
4. Technological features of the use of dyes in the production of medical nutrition products.

Theme 3. Substances that change the structure and physico-chemical properties of food.
1. What hygienic requirements for the use of substances that change the structure and physico-chemical properties of food in public catering, regulated by the current SanPiN.
2. The use of substances that change the structure and physico-chemical properties of food. Use in the production technology of special purpose products
3. Technological features of application of the substances changing structure and physical and chemical properties of foodstuff in production of products of medical food.

Theme 4. Substances that affect the taste and aroma of food.
1. What hygienic requirements for the use of substances that affect the taste and aroma of food in public catering are regulated by the current SanPiN.
2. The use of substances that affect the taste and aroma of food. Use in the production technology of special purpose products
3. Technological features of application of the substances influencing taste and aroma of foodstuff at production of products of medical food.
4. Technological features of application of the substances influencing taste and aroma of foodstuff at production of products of baby food.

Theme 5. Substances that help to increase the shelf life of food.
1. The use of substances that affect the increase in shelf life of food. Use in the production technology of special purpose products
2. Technological features of application of the substances influencing increase of shelf life of foodstuff at production of products of medical food.
3. Technological features of the use of substances that affect the increase in shelf life of food products in the production of baby food.

Theme 6. Substances that accelerate and facilitate the conduct of technological processes.
1. The use of substances that accelerate and facilitate the conduct of technological processes. Use in the production technology of special purpose products
2. Technological features of the use of substances that accelerate and facilitate the conduct of technological processes in the production of medical nutrition products.
3. Technological features of the use of substances that accelerate and facilitate the conduct of technological processes in the production of baby food.

Theme 7. Substances that accelerate and facilitate the conduct of technological processes-technological additives.
1. To characterize the substances that accelerate and facilitate the conduct of technological processes (technological additives)

2. What food additives are included in the group "Enzymes and enzyme preparations", give examples. Their role in technological processes.
3. What food additives are included in the group "baking Powder", give examples. Their role in technological processes.
4. What food additives are included in the group "means of processing flour, baking improvers", give examples. Their role in technological processes.
5. What food additives are included in the Group "substances for bleaching flour", give examples. Their role in technological processes.
6. What food additives are included in the group "Defoamers, anti-foaming agents", give examples. Their role in technological processes.
7. What food additives are included in the group "acidity Regulators", give examples. Their role in technological processes.
8. What food additives are included in the group "Substances that contribute to the life of beneficial microorganisms", give examples. Their role in technological processes.
9. What food additives are included in the group "Emulsifying salts", give examples. Their role in technological processes.

Theme 8. Biologically active additive. Biologically active additive.

1. The main physiological functions of micronutrients in dietary SUPPLEMENTS. Use to adjust the power of the modern consumer.
2. Criteria for micronutrient fortification of food products. Use to adjust the power of the modern consumer.
3. Factors that form a negative image in the use of dietary SUPPLEMENTS. The use of dietary SUPPLEMENTS to adjust the nutrition of the modern consumer.
4. The main ingredients of functional products. Use to adjust the power of the modern consumer.
5. The role of vitamins in the body and in food production. Use to adjust the power of the modern consumer.
6. Theory of balanced nutrition. The use of dietary SUPPLEMENTS to adjust the nutrition of the modern consumer.

Theme 9. The use of food additives in the production of public catering products

1. Modern approaches to the creation of food products with specified properties
2. Use of food additives in food production
3. Ensuring the safety and quality of culinary products with specified properties
4. What theoretical and practical developments of food products with specified properties have been recognized?
5. What theoretical and practical developments are relevant in the near future?
6. How did scientific and technological progress affect the product range of food enterprises?

The procedure of this assessment event includes questions of basic and advanced levels for the interview, which allow you to evaluate the answers of students on the topics of the discipline. The questions offered to the student for interview allow to check the following competences: GC-5, GPC-2, PC-4.

Higher-level interview questions differ from the basic ones by deeper knowledge of the material.

In preparation for the answer, the student is granted the right to use normative documents, abstract.

Evaluation criteria:

"Excellent" is assigned to the student if the theoretical content of the course is mastered in full without gaps; more exhaustively, consistently, accurately and logically sound presents the material; available to cope with the tasks, questions and other types of knowledge; uses in the response for more material, all required program tasks performed, the quality of their performance assessed by the number of points close to maximum; analyzes the results; shows independence in performing tasks. He knows the features of the use of food and biologically active additives.

The assessment "good" is given to the student if the theoretical content of the course is fully mastered, the necessary laboratory competencies are mainly formed, all the training tasks provided for in the training program are completed, the quality of their performance is high enough. The student firmly knows the material, competently and essentially States it, without allowing significant inaccuracies in the answer to the question.

Assessment "satisfactory" is assigned to the student if the theoretical content of the course is mastered partially, but gaps are not essential, the majority of programme tasks performed, but contain errors when answering the question, the student is imprecise, not enough correct wording, there are violations of logical sequence in the presentation of program material.

Evaluation of "unsatisfactory" exhibited student, if he does not know a significant part of the program material, allows substantial errors, uncertain, with great difficulty performs laboratory work, necessary laboratory competence is not formed, the majority stipulated by the training program learning tasks are not fulfilled, the quality of their performance assessed by the number of points close to the minimum.

The assessment "credited" is exposed to the student if at interview the student reveals questions on subjects of discipline; is well guided: in terms, in rules of installation of the modern equipment, in layout decisions of shops and rooms, in the main directions of optimization of technological processes in public catering.

The assessment "not credited" is exposed to the student if at interview the student admits gross mistakes; is not guided in terms; does not know: rules of installation of the modern equipment, in the main directions of optimization of technological processes in public catering.

5. **Methodical instructions (by types of works provided by the working program of discipline)**

Independent work of the student provides the following technologies of formation of professional competences: preparation for lectures, independent study of literature, preparation of the written report on laboratory works, interview.

At independent study of the literature it is necessary to annotate sources on each subject, to study questions for interview, at preparation for laboratory occupations it is necessary to make the written report on each subject of employment.

5.1 Independent study of literature and Internet sources on topics № 1-9

In the work of the student a significant place is taken by taking notes. It is necessary to learn how to keep short notes. Keeping a synopsis creates especially favorable conditions for memorizing what you heard, as in this process, hearing, vision and hand take part. There are some General rules for recording material when independently studying literature and Internet sources.

On every subject should have a separate notebook, on pages which leave field for notes, issues, own thought. The most important provisions of the lecture should be emphasized. In order for information to be assimilated faster, it is necessary to arrange it vertically and horizontally, i.e. dividing the material into paragraphs, chapters, paragraphs.

It is recommended to read carefully, thoughtfully, try to remember the essential. The method of work with the text is individual. It depends on the experience, the General level of culture and erudition of the student, as well as the type of literature studied. However, the main techniques are the following: preliminary acquaintance with the book, text analysis, taking notes and working simultaneously with several sources.

Abstract-a complex way of presenting the contents of a book or article in a logical sequence. The abstract accumulates in itself the previous types of record, allows to cover comprehensively the contents of the book, article. Therefore, the ability to make a plan, abstracts, make extracts and other records determines the technology of the abstract.

5.2. Preparation of the report on laboratory works

Independent work of students on laboratory occupations assumes not only studying of methodical literature and independent performance of practical part of laboratory works, but also preparation of the written report and oral performance on their protection.

Admission to laboratory work occurs in the presence of students prepared version of the report. Protection of the report is made in the form of answers to interview questions. Laboratory classes are held in specially equipped laboratories. When preparing for a laboratory lesson, it is necessary to study the theoretical material that will be used in the course of laboratory work.It is necessary to read carefully the methodical instruction (description) to laboratory work, to think over the plan of carrying out work, to prepare necessary materials and tables for records of supervision.

A student with a good theoretical background usually makes a report on the work directly during the class.

Preparation for classes helps to consolidate and deepen the understanding of the studied material, as well as the acquisition of skills to analyze specific production situations.

Admission to the works takes place in the presence of undergraduates printed version of the report. Protection of the report takes place in the form of a report on the work performed and answers to questions from the teacher.

The maximum number of points a student receives, if the design of the report meets the requirements, the report fully reveals the essence of the work.

The basis for lowering the estimate is:

* inaccuracies or incorrect formulations of materials have been used in the protection of laboratory work;

* the work is not fully completed, but the volume of the performed part is such that it allows to obtain the correct results and conclusions on the main, fundamentally important tasks of the work.

The report can be sent for revision in the following cases:

* the design of the report does not meet the requirements of standard control;

* mistakes (not gross) and inaccuracies were made in the work.

The final product of independent work: report on laboratory work.

Tools and technologies assessment: a job interview.

Preparation of individual tasks for laboratory work

Laboratory work No. 1. Meeting of the scientific laboratory

Topic: the Main normative documents of the use of food additives in industrial food products. Classification of food additives.

Task for independent work

On an individual task to prepare presentations of creative projects:

1. Safety requirements for food additives. Use in the production of catering products for special types of food.

2. Original cuisine. Regulatory framework in the field of food additives, the situation and scope of application in the production of public catering products.

3. Original cuisine. Technical regulation of the Customs Union TR CU 021/2011 "on food safety". position and scope of application in the production of public catering products.

Tasks for an additional bonus on the point-rating system:

* Food additives in the production of foreign food

Laboratory work No. 2.

Topic: Food dyes.

On an individual task to prepare abstracts or presentations of creative projects:

* Use of dyes in food production.

* Regulatory legal acts to ensure the safety of new types of food products.

Tasks for an additional bonus on the point-rating system:

The use of dyes in the production of children's products, dietary, therapeutic and preventive nutrition.

Laboratory work No. 3

Topic: Study of the action of color-regulating reagents

On an individual task to prepare messages, abstracts or presentations of creative projects:

* Use of color-regulating reagents in food production.

Tasks for an additional bonus on the point-rating system:

The use of color-regulating reagents in the production of dietary products, therapeutic and preventive nutrition.

Laboratory work No. 4

Lesson theme: the Study of the properties of pectin.On an individual task to prepare abstracts and presentations of creative projects:

* Use of pectins in food production.

* Regulatory legal acts to ensure the safety of new types of food products.

Tasks for an additional bonus on the point-rating system:

The use of pectins in the production of children's products, dietary, therapeutic and preventive nutrition.

Laboratory work No. 5

The theme of the lesson: to Study the foaming ability of dietary cellulose ethers.

On an individual task to prepare abstracts and presentations of creative projects:

* Use of cellulose esters in food production.

Tasks for an additional bonus on the point-rating system:

The use of cellulose esters in the production of children's products, dietary, therapeutic and preventive nutrition

Laboratory work No. 6

Topic: food Preservatives. Determination of nitrates and nitrites in meat and meat products.

On an individual task to prepare abstracts and presentations of creative projects:

* Use of preservatives in food production.

Tasks for an additional bonus on the point-rating system:

Research in the field of expanding the range of preservatives for food production.

Laboratory work No. 7

Topic: Food flavors.

On an individual task to prepare abstracts and presentations of creative projects:

* Use of food flavorings in food production.

* Regulatory legal acts to ensure the safety of new types of food products.

Tasks for an additional bonus on the point-rating system:

Scientific research in expanding the range of food flavors and their use in food production.

Laboratory work No. 8

Topic: Influence of antioxidants on physical and chemical parameters of vegetable oils and fats.

On an individual task to prepare abstracts and presentations of creative projects:

* Use of antioxidants and antioxidants in food production.

* Regulatory legal acts to ensure the safety of new types of food products.

Tasks for an additional bonus on the point-rating system:

The use of antioxidants and antioxidants in the production of children's products, dietary, therapeutic and preventive nutrition

Laboratory work No. 9. Meeting of the scientific laboratory

Modern approaches to the use of biologically active additives.

Task for independent work

On an individual task to prepare presentations of creative projects:

1. The use of micronutrients in the composition of dietary SUPPLEMENTS for the expansion of special-purpose food and nutrition correction of the modern consumer.
2. Criteria for micronutrient fortification of food products, for the expansion of special-purpose food.
3. The use of dietary SUPPLEMENTS for the development of food technology to adjust the nutrition of the modern consumer.
4. The main ingredients of functional products. Use for the development of food technology to adjust the nutrition of the modern consumer.
5. Biologically active additive. Use to adjust the power of the modern consumer.
6. Biologically active additives, use in food production. Use to expand the range of food products for children and adolescents.
7. Biologically active additives, use in food production. Use to expand the range of food therapeutic food.

8. Biologically active additives, use in food production. Use to expand the range of diet food products.

9. Biologically active additives, use in food production. Use to expand the range of food preventive nutrition.

10. Biologically active additives, use in food production. Use to expand the range of student food products.A meeting of a scientific laboratory is a form of organizing an exchange of views. This term does not indicate what the nature of the exchange of views will be. In contrast, the concept of "discussion" implies that in the course of a meeting, its participants do not just make reports on some issue, but also exchange remarks, clarify each other's positions, etc.

During the discussion there is a free exchange of views (open discussion of professional problems). "Polemic" is a special kind of discussion in which some participants try to refute, "destroy" their opponents. "Dialogue", in turn, is a type of speech characterized by situativeness (dependence on the situation of the conversation), contextuality (conditioned by previous statements), a low degree of organization, involuntary and unplanned nature.

The purpose of The meeting of the scientific laboratory is to provide the participants with an opportunity to Express their point of view on the discussed problem, and in the future to formulate either a common opinion or clearly distinguish the different positions of the parties.

Moderation (maintenance).

A key element of any meeting is moderation. The term "moderation" comes from the Italian "moderare" and means "mitigation", "containment", "moderation", "restraint". The moderator called the leader. In the modern sense, moderation is understood as a technique of organizing communication, through which group work becomes more focused and structured.

The task of the host is not just to announce the participants, to identify the main themes of the event and to keep in their hands everything that happens from beginning to end. Therefore, the requirements for the professional qualities of the leaders are high. The presenter should be able to clearly formulate the

problem, not to allow thoughts to spread, highlight the main idea of the previous speaker and, with a smooth logical transition, give the floor to the next, follow the rules.

The moderator Of the meeting of the scientific laboratory should not be:

* Confused and intimidated. Such qualities are typical for novice presenters, associated with excitement and lack of practice.

• Authoritarian. The desire to control and regulate the discussion as much as possible, to maintain strict discipline, does not encourage discussion.

• Condoning. The moderator is obliged to focus the discussion on the issues under discussion and concentrate it in time. Connivance on his part will contribute to the activation of alternative leaders who will try to shift attention to themselves. The discussion will begin to move away from the topic, to break up into local discussions.

• Too active. The task of extracting information requires limiting the activity of the presenter.

* Poor listeners. The lack of listening skills of the presenter will lead to the fact that a lot of useful things will be lost from what was said during the discussion. In this case, the most subtle comments received as a result of public discussion, which are the basis for deepening the discussion, will be ignored. The reasons for this behavior may be the desire of the presenter to follow the discussion questionnaire rigidly, as a result of which he focuses his attention on it. Or the concern of effectively listening to all the band members without missing any of them and giving everyone equal time.

Rules for participants Of the meeting of the scientific laboratory:

the participant must be an expert on the topic under discussion;

it is not necessary to agree to participate in the meeting just for the sake of the fact of participation: if you have nothing to say, it is better to remain silent.

Stages of preparation of the Meeting of the scientific laboratory:

1. Choice of subject. Carried out with a focus on the direction of scientific work of the Department and teachers. Topics on the discipline "Food and dietary

supplements" contributes to the formation of professional competencies, knowledge and skills in the profile of training. In addition, the topic should be of interest to listeners.

In preparation for the Meeting, the participants present the results of independent work on the topic under study, pay attention to modern scientific directions of studying this issue, Express their point of view.

2. Selection of the host (moderator) and its preparation. The moderator should possess such qualities as sociability, artistry, intelligence. Personal charm and a sense of tact are also important..

3.Selection of participants and definition of experts of the Meeting. The essence of any Meeting of a scientific laboratory is to make an attempt to "brainstorm" on a certain problem and find answers to some important questions. To do this, identify topics for discussion for 2-4 weeks in the framework of independent work of students in the discipline. The student audience is divided into groups: experts or specialists, moderators, a working group to prepare a solution.

The leading teacher identifies potential experts who could give qualified answers to questions arising in the framework of the discussion of the declared topic of the Meeting of the scientific laboratory.

Methodology Of the meeting of the scientific laboratory.

Meetings of the scientific laboratory opens leading. He represents the participants, monitors the rules, which are determined at the beginning of the discussion, summarizes the results, summarizes constructive proposals.

Discussion at the Meeting of the scientific laboratory. it should be constructive in nature, should not be reduced, on the one hand, only to reports on the work done, and on the other-only to critical speeches. Messages should be brief, no more than 5-6 minutes.

The draft final document is announced at the end of the discussion(discussion), additions, changes, amendments are made to it.

Student performance evaluation criteria:

The procedure of this evaluation event includes a set of tasks for independent work, which allow you to evaluate the independent work of students on the topics of the discipline "Food and dietary supplements".

The directions offered to the student for implementation of the scientific project allow to form practical knowledge and skills according to the required competences.

To prepare for the defense of an individual research project, the student must independently collect and analyze materials on the topic of research and submit them in writing on A4 sheets.

Description of grading scale

The assessment "excellent" is given to the student if the theoretical content of the research material is presented in sufficient volume, exhaustively, consistently, clearly and logically harmoniously presents the material; freely copes with questions, uses additional material in the answer, analyzes the results; shows independence when performing tasks. Knows features of practical application of the prepared material.

The assessment "good" is given to the student if the theoretical content of the course is fully mastered, the necessary competencies are mainly formed, all the training tasks provided for in the training program are completed, the quality of their performance is high enough. The student firmly knows the material, competently and essentially States it, without allowing significant inaccuracies in the answer to the question.

Assessment "satisfactory" is assigned to the student if the theoretical content of the course is mastered partially, but gaps are not essential, the majority of programme tasks performed, but contain errors when answering the question, the student is imprecise, not enough correct wording, there are violations of logical sequence in the presentation of program material.

Evaluation of "unsatisfactory" exhibited student, if he does not know a significant part of the program material, allows substantial errors, uncertain, with

great difficulty performs laboratory work, necessary laboratory competence is not formed, the majority stipulated by the training program learning tasks are not fulfilled, the quality of their performance assessed by the number of points close to the minimum.

The assessment "credited" is exposed to the student if at interview the student reveals questions on subjects of discipline; is well guided: in terms, in rules of installation of the modern equipment, in layout decisions of shops and rooms, in the main directions of optimization of technological processes in public catering.

The assessment "not credited" is exposed to the student if at interview the student admits gross mistakes; is not guided in terms; does not know: rules of installation of the modern equipment, in the main directions of optimization of technological processes in public catering.

5.3. Preparation for examination

To prepare for the exam, the student must complete the laboratory work, issue notebooks with completed tasks, protect the work. In the presence of debts on current certification on discipline the student to examination is not allowed. The exam on the discipline is provided orally.

The procedure of the exam is carried out in accordance with the Regulations on the current control of progress and intermediate certification of students on educational programs of higher education in NCFU.

The exam ticket includes 2 questions: 1 to determine the level of theoretical knowledge, 2-to determine the level of practical skills. To prepare for the ticket is given 30 minutes

When preparing for the answer, the student is given the right to use: reference tables, reference books, a personal computer with a package of necessary programs.

The criteria for the evaluation of competences:

Assessment "excellent" is exposed to the student, if he demonstrates a deep knowledge of the program material; exhaustively, consistently, competently and logically harmoniously presents the material; freely operates with the basic theoretical provisions on the problems of the presented material.

The assessment "well" is exposed to the student if demonstrates sufficient knowledge of a program material; competently and in essence States a program material, does not allow essential inaccuracies at the answer to a question; independently generalizes and States a material, without allowing essential mistakes.

The assessment "satisfactorily" is given to the student if he presents the main program material, but does not know the individual details; admits inaccuracies, incorrect formulations, violates the sequence in the presentation of the program material.

The assessment "unsatisfactorily" is exposed to the student if does not know a considerable part of the program material; admits gross errors at the statement of the program material.

8 The list of basic and additional literature

8.1 Main literature

1. Kiseleva S.I. Pishchevye i biologicheski aktivnye dobavki [Elektronnyj resurs]: uchebnoe posobie/ Kiseleva S.I.- Elektron. tekstovye dannye.- Novosibirsk: Novosibirskij gosudarstvennyj tekhnicheskij universitet, 2013.- 48 c.- Rezhim dostupa: http://www.iprbookshop.ru/44821.

8.2 Additional literature

1. Omarov, R.S. Pishchevye i biologicheski aktivnye dobavki v proizvodstve produktov pitaniya: uchebnoe posobie / R.S. Omarov, O.V. Sycheva; Federal'noe gosudarstvennoe byudzhetnoe obrazovatel'noe uchrezhdenie vysshego professional'nogo obrazovaniya Stavropol'skij gosudarstvennyj agrarnyj universitet. - Stavropol': Agrus, 2015. - 64 s. - Bibliogr. v kn. - ISBN 978-5-9596-1104-0; To zhe [Elektronnyj resurs]. - URL: //biblioclub.ru/index.php?page=book&id=438735
2. Kazhaeva, O.I. Tovarovedenie i ekspertiza prodovol'stvennyh tovarov: uchebnoe posobie / O.I. Kazhaeva, L.A. Manihina; Ministerstvo obrazovaniya i nauki Rossijskoj Federacii, Federal'noe gosudarstvennoe byudzhetnoe obrazovatel'noe uchrezhdenie vysshego professional'nogo obrazovaniya «Orenburgskij gosudarstvennyj universitet». - Orenburg: Orenburgskij gosudarstvennyj universitet, 2014. - 211 s.