MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SYMY NATIONAL AGRARIAN UNIVERSITY

Department of Nutrition Technology

«Approved by»

Head of Department

(F.V.Pertsevoi)

«25» June 2020

EDUCATIONAL PROGRAM

FOOD QUALITY MANAGEMENT

Knowledge Area 18 "Manufacturing and Technology"

Specialty: 181 "Food technologies"

2020 – 2021 academic year

Educational program of subject «**Food Quality Management**» for postgraduate students by specialty 181 "Food technologies"

Developed by: PhD, Assosiate Professor of Food Technology Department Stepanova T.M.

The educational program is approved at the meeting of the **Department of Nutrition Technology**

Protocol from "25" June 2020 № 16

Head of Department _____ (Pertsevoi F.V.)

Agreed:

Guarantor of the educational program _____ (Мельник О.Ю.)

Dean of the Faculty of Food Technologies _____ (O.V. Radchuk)

Methodist of the Department of Education Quality,

Licensing and Accreditation _____ (N.M. Baranik)

Registered in the electronic database: date: 28.08. 2020 p.

Description of the discipline

<table>
<tr><td rowspan="2">Name of indicators</td><td>Branch of knowledge, direction of training, educational and qualification level</td><td>Characteristics of the discipline</td></tr>
<tr><td></td><td>full-time education</td></tr>
<tr><td rowspan="2">Amount of credits – 3</td><td>Branch of knowledge: <u>18 «Production and technology»</u></td><td rowspan="2">Special (vocational training)</td></tr>
<tr><td>Specialty: 181 Food technology</td></tr>
<tr><td>Modules - 2</td><td rowspan="5"></td><td>Year of education:</td></tr>
<tr><td>Content modules - 2</td><td>2020-2021</td></tr>
<tr><td rowspan="3">Total hours – 120</td><td>Course</td></tr>
<tr><td>2</td></tr>
<tr><td>Semester</td></tr>
<tr><td rowspan="6">Weekly hours for full-time study: classroom – 1,5 independent work of the student – 1,5</td><td rowspan="6">Educational-scientific level: third</td><td>3</td></tr>
<tr><td>Lectures</td></tr>
<tr><td>44</td></tr>
<tr><td>Practical, seminars</td></tr>
<tr><td>44</td></tr>
<tr><td>Independent work</td></tr>
<tr><td>32</td><td>Individual tasks: -</td></tr>
<tr><td></td><td>Type of control: differentiated credit</td></tr>
</table>

Note.

The ratio of the number of hours of classroom studies to independent work is (%): for full-time education (%): 73,3/26,7

2. Purpose and tasks of the discipline

Purpose: expanding and deepening the knowledge of the legislative and regulatory base in the field of quality, safety and examination of food products, as well as methodological bases of identification and falsification of food products, theoretical and practical bases of quality control.

Tasks: training of specialists who are able to solve complex problems in the field of professional or research-innovation activity in the field of food quality management, which involves deep rethinking of existing and creation of new holistic knowledge capable of abstract thinking and project development and management, which are familiar with important problems and issues of food quality assurance, basic directions and methodical approaches of food quality management, improvement and development of food asnyh of food safety based on the latest science and technology..

As a result of studying the discipline, the postgraduate student must:

Know: Regulatory documents on food safety; criteria for hygienic evaluation of food products. The main harmful substances that can be found in food. Methods for detecting harmful substances in food and ways to reduce their effects on the human body. Dangers associated with the consumption of various foods; technological process features that reduce the content or inactivate harmful substances and the HACCP system.

Be able to: identify, pose and solve problems, organize, plan, conduct research, analyze, evaluate and compare various theories, concepts and approaches in the subject area of scientific research, make appropriate conclusions, provide suggestions and recommendations; to analyze the scientific and technical level and tendencies of the development of world and domestic food quality assurance systems, to generate new ideas for solving the existing complex problems in the field of food quality management; apply food safety knowledge and expertise to create foods with new properties; present and discuss research findings; to develop normative and technical documentation on the results of scientific and practical developments in the chosen direction.

3. Educational program

(Approved by AC of SNAU 28.11.18, Protocol № 3)

Content module 1. Effect of technological, culinary and normative-legal factors on the quality of food products.

Topic 1. Introduction. Regulatory basis of quality and safety of food products.

Key Indicators of Food Security. Documents regulating the quality and safety of food products in EU countries. Normative base of Ukraine.

Topic 2. Factors of food quality.

The content and composition of proteins, lipids, carbohydrates as a factor in quality. The content and composition of vitamins, minerals, as a factor of quality.

Water of food products as a factor in quality.

Topic 3. Food contamination and prevention.

Contamination of food products with heavy metals.

Surface and structural contamination of food products with radionuclides.

Pollution by nitrates and nitrites and the possibility of reducing their amount in food products.

Fungal metabolites and prevention of their development in food products.

Content module 2. Methodology, organization and sensory control of products quality.

Topic 4. Quality of restaurant products.

Influence of products quality components on the final result of production. Quality and product features. Evaluating product quality.

Topic 5. Methods and indicators of product quality assessment.

Quality Indicators and Product Parameters.

Methods of product quality assessment: differential, complex, mixed, statistical. Classification of methods depending on the means of measurement: measuring, registration, calculation, sociological, expert and organoleptic.

Nomenclature of the main groups of indicators of product quality according to the properties that they characterize: indicators of purpose, reliability, manufacturability, transportability, safety, standardization and unification, aesthetic, ergonomic, patent and environmental, use of raw materials, materials, fuel, energy and labor resources.

Topic 6. Organization of quality control.

Economic dependence of the employee and quality.

Product quality control at enterprises.

Quality control carried out by special laboratories.

Topic 7. HACCP Quality Control System.

History. Legislative base.

Basic concepts.

Principles of HACCP.

Advantages of the HACCP system.

4. Structure of the discipline

Назви змістових модулів і тем	Number of hours											
	Full-time						external form					
	Total	including					Total	including				
		Lectures	Practical	Laboratory	Individual	Independent work		Lectures	Practical	Laboratory	Individual	Independent work
Module 1. Legislative regulation of quality and safety of food products												
Content module 1. Effect of technological, culinary and normative-legal factors on the quality of food products												
Topic 1. Introduction. Regulatory basis of quality and safety of food products.	12	4	4			4						
Topic 2. Factors of food quality	20	8	8			4						
Topic 3. Food contamination and prevention.	24	10	8			6						
Total content module 1	56	22	20			14						
Module 2. Methods, indicators and organization of quality control.												
Content module 2. Methodology, organization and sensory control of products quality.												
Topic 4. Quality of restaurant products	14	6	4			4						
Topic 5. Methods and indicators of product quality assessment	18	6	8			4						
Topic 6. Organization of quality control	16	4	8			4						
Topic 7. HACCP Quality Control System.	16	6	4			6						
Total content module 2	64	22	24			18						
Total hours in discipline	**120**	**44**	**44**			**32**						

5. Topics and plan of lectures

№	Title	Number of hours
1	Topic 1. Introduction. Regulatory basis of quality and safety of food products.	4
2	Topic 2. Factors of food quality	8
3	Topic 3. Food contamination and prevention	10
4	Topic 4. Quality of restaurant products	6
5	Topic 5. Methods and indicators of product quality assessment	6
6	Topic 6. Organization of quality control	4
7	Topic 7. HACCP Quality Control System.	6
	Total	**44**

6. Topics of practical classes

№	Title of theme	Number hours
1	Study of the normative and legal basis of quality and safety of food products	4
2	Study of food products quality factors	8
3	Study of the food products contamination factors and the possibilities of preventing it	8
4	Study of the factors influencing the quality of restaurant production.	4
5	Study of product's quality control methods	8
6	Study of the organization of quality control at the enterprise	8
7	Study the HACCP system	4
	Total	44

7. Individual work

№	Title of theme	Number hours
1	Key Indicators of Food Security.	4
2	Water of food as a factor in quality.	4
3	Pollution of food by metabolites of microorganisms.	6
4	Basic concepts, terms and quality of food products.	4
5	Consumer properties of food products.	4
6	Food quality control carried out by special laboratories.	4
7	HACCP quality control system: decision tree	6
	Total	32

8. Methods of training

1. Methods of individually differentiated learning:

1.1. Personalized Learning - an individually directed process of displaying graduate student achievement online that provides a flexible learning environment, deploying more resources,

1.2. Differentiated Instructoin – by consulting the applicants as scheduled,
1.3. Inquiry-based Learning – gaining knowledge by formulating your own questions and finding answers to them.
2. Methods of training on the nature and level of independent mental activity of applicants.
2.1. Problematic (problematic-informational)
2.2. Active teaching methods are the use of technical training tools, the use of problematic situations, the use of training and control tests, the use of basic lecture notes.
2.3. Interactive Learning Technologies are the use of multimedia technologies, interactive whiteboards and spreadsheets.

9. Control methods

1. Rating control over a 100-point ECTS rating scale
2. Conducting intermediate control during the semester
3. Multicriteria evaluation of the applicants:
- the level of knowledge demonstrated in laboratory classes;
- activity during the discussion of the issues raised in the class;
- results of laboratory work execution and protection;
- self-study of the topic as a whole or individual issues;
- test results;
- written tasks in the course of control work.
4. Conducting an assessment of the applicant on the results of individual work on the topic received during the presentation and protection of the completed task before the commission.

10. Distribution of points awarded by postgraduate students

Current testing and independent work							Total for the modules and IWS	Attestation	Total
Module 1 – 35 points			Module 2 – 35 points						
T1	T2	T3	T4	T5	T6	T7	85 (70+15)	15	100
15	10	10	10	5	10	10			

Scale of assessment: national and ECTS

The amount of points for all types of educational activities	Rating ECTS	Rating on a national scale	
		for the exam	for the credit
90 – 100	A	perfectly	enrolled
82-89	B	fine	
75-81	C		
69-74	D	satisfactorily	
60-68	E		

35-59	FX	unsatisfactory with the possibility of re-examining	is not enrolled with the possibility of re-examining
1-34	F	unsatisfactorily with compulsory repeated study of discipline	is not enrolled with repeated study of discipline

11. Individual tasks

1. Basic terms and definitions in the field of quality, safety, adulteration and examination of food products.
2. International and national regulatory framework for food quality, safety and expertise.
3. International Food Law Codex Alimentarius.
4. HACCP Food Safety System.
5. Standards of the DSTU ISO 22000 series.
6. Basic legislation on food security in Ukraine.
7. Basic principles of state policy on food safety.
8. Harmonization of quality management standards with international ones.
9. A systematic approach to quality management and the development of a systematic approach in Ukraine.
10. Quality management according to state standards DSTU ISO 9001-2001 and DSTUSISO 9004-2009 (Factors affecting product quality. Elements and functions of the quality system.
11. The feasibility of implementing quality management systems.
12. Requirements for quality management systems and product requirements. Process approach to quality management systems.
13. Quality policy and objectives. Management of systems and processes.
14. Application of quality management principles. Management, its obligations.
15. Resource management. Production and production planning.
16. Measurement, analysis and continuous improvement of the quality system.
17. Guidelines for self-assessment. Requirements for the prevention of the manufacture, sale, use of substandard, dangerous foods.
18. Documentary confirmation of food safety
19. Examination of food products. Types of commodity examination.
20. Tasting as a kind of quality expertise.
21. Classification of organoleptic characteristics.
22. Methodology of sensory analysis. Classification of methods of sensory analysis.
23. General characteristics of recognition, descriptive and scoring methods of organoleptic analysis.
24. Organizing and conducting organoleptic analysis.

12. Recommended literature

Basic:

1. Quality Assurance for the Food Industry: A Practical Approach / J. Andres Vasconcellos // New York. CRC Press. 2003. P. 448. http://www.bookhut.net/wp-content/uploads/2014/05/Quality-Assurance-for-the-Food-Industry-A-Practical-Approach.pdf

2. Food Quality Assurance. Principles and Practices / Inteaz Alli // New York. CRC Press. 2004. P. 154 http://www.thanut-swu.com/images/BOT331/food%20quality%20assurance.pdf

3. Law of Ukraine "On the quality and safety of food products and food raw materials".

4. Law of Ukraine "On Protection of Consumer Rights"

5. DSTU 4161-2003 «Food safety management systems».

6. DSTU ISO 9000-2001 «Quality management systems. Basic Provisions and Dictionary».

7. DSTU ISO 9001-2001 «Quality management systems. Requirements».

8. DSTU ISO 9004-2001 « Quality management systems. Guidelines for improving performance».

9. Law of Ukraine «On the quality and safety of food products and food raw materials».

Additional:

1. Quality Assurance in Seafood Processing: A Practical Guide/ Bonnell, A. David // Island Press. 2004. P. 228. https://books.google.com.ua/books?id=4V31BwAAQBAJ&hl=ru

2. Improving the quality and safety of fresh fruits and vegetables. a practical approach manual for trainers / Maya Piñeiro, Luz Berania Díaz Ríos // Food and Agriculture Organization of the United Nations Rome. 2004. P. 110. http://www.fao.org/ag/agn/cdfruits_en/others/docs/manual_completo.pdf

1.

2. World food safety guidelines for airline catering, 3rd edition. Atlanta, GA: International Flight Services Association, 2010. 87 p. Available at: http://www.ifsachoices.com/WFSG_2010 (updated).pdf

3. Prerequisite programmes on food safety - Part 1: Food manufacturing

4. Recommended international code of practice for smoked fish [Superseded by: Section 12 - Processing of smoked fish. In: CAC/RCP 52-2003, Code of practice for fish and fishery products, pp.144-157. Rome: Codex Alimentarius Commission, FAO; WHO]

5. ISO 14159:2002 Safety of machinery - Hygiene requirements for the design of machinery

6. Cleaning procedure; 2-301.14, When to wash. In: Food code 2009: Chapter 2 - Management and personnel. Silver Spring, MD: US Food and Drug Administration. Available at: http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/

7. ISO 14726 Ships and marine technology - Identification colours for the content of piping systems