

Ministry of Education and Science of Ukraine
Sumy National Agrarian University
Faculty of Food Technology
Department of Technology of Nutrition

Syllabus of an educational component

EC 4 FOOD QUALITY AND SAFETY MANAGEMENT

Specialty	G 13 Food technology
Educational program	Food technology
Level of higher education	Second (Master's)

Developer:

(signature)

Tetiana STEPANOVA PhD, Associate Professor

Reviewed, approved and ratified at the meeting of the Department of Food Technology

Protocol № 23 by «04» June 2025

Head of the Department

(signature)

Oksana MELNYK

Approved:

Guarantor of educational program

(signature)

Maryna SAVCHENKO
(name)

Dean of the faculty, where the educational program is implemented

(signature)

Natalya BOLHOVA
(name)

Review of the work program (attached) provided:

(name)

(name)

Methodologist of the Department of Educational Quality, Licensing and Accreditation

(signature)

(name)

Registered in the electronic database: date: 02.06. 2025

Information on reviewing the work program (syllabus):

Academic year in which changes are made	The number of the appendix to the work program with a description of the changes	The changes have been reviewed and approved		
		Date and number of the Protocol of the meeting of the department	Head of Department	Guarantor of the educational program

1. ЗАГАЛЬНА ІНФОРМАЦІЯ ПРО ОСВІТНІЙ КОМПОНЕНТ

1.	Name of educational component	EC 4 FOOD QUALITY AND SAFETY MANAGEMENT							
2.	Faculty/Department	Food technology/nutrition technology							
3.	Status of EP	Mandatory							
4.	EK can be offered for (filled for selective EK))	Educational and professional program Food Technology specialty G13 Food Technology							
5.	Level NQF	7 level							
6.	Semester and duration of study	1 semester, 1-15 week							
7.	Credits ECTS	5							
8.	The total volume of hours and their distribution	150							
9.		Contact work (classes)						Independent work	
		Lecture		Practise/Seminars		Lab			
		Full-time	External	Full-time	External	Full-time	External	Full-time	External
		14	-	-	2	46	-	90	148
10.	Language of education	English							
11.	Teacher / Coordinator of the educational component	Stepanova Tetiana							
12.	Contacts	Name: Stepanova Tetiana Position: Associate Professor, Department of Food Technology Working place: Room 314, Mechanization Building E-mail: tetiana.stepanova@snau.edu.ua Consultation hours: every Monday from 1:00 PM to 2:00 PM							
13.	General description of the educational component	The educational component includes sections on food safety, criteria for hygienic assessment of food production and is focused on modern food safety systems. The content of the discipline is adapted to the specialty. The subject of this course is the development and implementation of the HACCP and ISO quality and product safety management system in the food quality and safety management system. The emphasis is on the main quality management standards for the purpose of rational management of production processes in food production.							
13.	The aim of education component	to ensure a sufficient theoretical and practical level of students' knowledge of food safety, hygienic assessment of food production in order to ensure the production of high-quality food products.							
14.	Prerequisites for studying EK, connection with other educational components of EP	1. The educational component is based on knowledge of food technology (knowledge of the features of the production of dishes and culinary products by means of restaurant enterprises), standardization, certification and quality management of food products and restaurant services (knowledge of the main regulatory documents regulating the activities of restaurant enterprises). 2. The educational component is the basis for studying the EC Innovative technologies in industry enterprises, Professional practice							
15.	Name of educational component	Compliance with academic integrity for higher education applicants involves: independent completion of educational tasks, tasks of current and final control of learning outcomes; references to sources of information when using ideas, statements, and information; compliance							

		<p>with the norms of copyright legislation; provision of reliable information about the results of one's own educational or scientific activities.</p> <p>Violations of academic integrity when studying for the OC are considered: academic plagiarism, academic fraud (copying, cheating, passing off someone else's work as your own), use of electronic devices during the final knowledge control</p> <p>For violations of academic integrity, students may be held academically liable:</p> <p>Academic plagiarism - score 0, re-performance of the task.</p> <p>Academic fraud - cancellation of points received; re-taking the assessment; re-performance of work not completed independently;</p> <p>Use of electronic devices during the final knowledge control - suspension from performing the work, score 0, re-passing the final control</p>
16	Link to the course in the system Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=3356
17	Keywords	Quality management, food safety, international quality standards, HACCP, food safety management systems

2. LEARNING OUTCOMES BY EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH PROGRAM LEARNING OUTCOMES

Learning results for EK: After studying the educational component, the student will be able to...	Program learning outcomes that are directed to EK (indicate the number according to the number given in OP)					As the LOE is estimated
	ІІРН 2	ІІРН 3	ІІРН 5	ІІРН 6	ІІРН 7	
LOE 1. Know the basics of food safety when using it in the production of dishes and culinary products by means of restaurant enterprises	+	+				Multiple selection and compliance tests; solving situational problems
LOE 2. Understand the structure and interrelationship of production processes of food enterprises in order to rationally manage them		+	+			Multiple selection and compliance tests; solving situational problems
LOE 3. Know the standards of HACCP and ISO quality management systems for implementation in individual food enterprises				+	+	Multiple selection and compliance tests; solving situational problems
LOE 4. Be able to independently acquire modern knowledge and effectively establish communication when performing team tasks			+		+	Presentation with a report, differential assessment

3. CONTENT OF THE EDUCATIONAL COMPONENT (PROGRAM OF THE COURSE)

Topic. List of issues to be addressed within the topic	Distribution within the general budget of time			Recomended literature ¹
	Class work		Indep. work	
	Lc	Lb		
	Full/Cor	Full/ Cor	Full/ Cor	
Lc Topic 1. Introduction. Regulatory framework for food quality and safety. Main indicators of food safety. Documents regulating the quality and safety of food products in the EU countries. Regulatory framework of Ukraine. Lb. Study of the regulatory framework for food quality and safety. Lw. Regulatory framework for food quality and safety in the EU countries.	2/-	8/-	14/21	1, 2, 3, 4, 6, 8
Lc Topic 2. Factors of quality of food products. The content and composition of proteins as a factor of quality. The content and composition of carbohydrates as a factor of quality. The content and composition of lipids as a factor of quality. The content and composition of vitamins, minerals, as a factor of quality. Lb. Study of factors of quality of food products Lw. Water in food products, as a factor of quality.	2/-	4/-	14/21	2, 8,11
Lc Topic 3. Food contamination and possibilities for its prevention. Food contamination with heavy and rare metals. Surface and structural contamination of food products with radionuclides. Contamination with nitrates and nitrites and possibilities for reducing their amount in food products. Lb. Study of food contamination and possibilities for its prevention Iw. Fungal metabolites and prevention of their development in food products.	2/-	4/-	14/21	1, 2,4,10
Lc Topic 4. Quality of restaurant products. The influence of product quality components on the final production result. Product quality and properties. Product quality assessment. Lb. Study of the quality of restaurant products. Iw. Ways to improve the quality of restaurant products	2/-	8/-	14/21	2,4,10,11
Lc Topic 5. Regulatory and legal support for the regulation of the use and circulation of genetically modified organisms (GMOs). The concept of GMOs, terms and definitions. Risk assessment when consuming GMOs Monitoring and control of GMOs. Labeling of food products. Legislative regulation of the use of GMOs. Lb. Study of regulatory and legal support for the regulation of the use and circulation of genetically modified organisms. Iw. Main aspects of GMO quality management.	2/-	8/-	14/21	2, 8,13

¹Specific source from the main or additionally recommended literature

Lc Topic 6. Approaches to the development of food safety management systems based on the HACCP concept. Legislative framework. Basic concepts. HACCP principles. Advantages of the HACCP system. Lb. Study of the HACCP quality control system Iw. History of the HACCP quality control system	4/2	14/-	20/22	4,5,7,11
Totally	14/2	46/-	90/148	

4. TEACHING AND LEARNING METHODS

LOE	Teaching methods (work to be done by the teacher during classes, consultations)	Number of hours	Teaching methods (what types of educational activities the student must perform independently)	Number of hours
LOE 1. Know the basics of food safety when using it in the production of dishes and culinary products by means of restaurant enterprises	Explanatory-reproductive methods: lecture, story-explanation, aimed at highlighting the value-oriented content of educational material (in the context of professional tasks) Use of the MOODLE, ZOOM platform during the mixed form of training.	15	work with textbooks, manuals, materials of the Internet; , illustration, demonstration, performance of independent works, etc.	22
LOE 2. Understand the structure and interrelationship of production processes of food enterprises in order to rationally manage them	Partial search methods: problem-dialogue, modeling, case method, etc. Use of the MOODLE, ZOOM platform during the mixed form of training.	15	independent search of educational information	22
LOE 3. Know the standards of HACCP and ISO quality management systems for implementation in individual food enterprises	Partial search methods: problem-dialogue, modeling, case method, etc. Use of the MOODLE, ZOOM platform during the mixed form of training.	15	Literature review and regulatory documentation on the topic, on the Moodle platform	22
LOE 4. Be able to independently acquire modern knowledge and effectively establish communication when performing team tasks	Problematic - discussions and debates on the studied material. Lecture-press conference. Use of the MOODLE, ZOOM platform during the mixed form of training.	15	Literature review and regulatory documentation on the topic, on the Moodle platform	24

5. ASSESSMENT BY EDUCATIONAL COMPONENT

5.1. Diagnostic assessment (indicated as necessary)

5.2. Summative assessment

5.2.1 For the assessment of expected learning outcomes, the following is provided:

№	Methods of summative assessment	Points / Weight in the overall score	Date of compilation
	Module 1 (35 points)		
1.	Intermediate computer-based testing	15 points / 15%	By the end of week 7
2.	Performing and defending laboratory work	20 points / 20%	1-7 week
	Module 2 (35 points)		
3.	Intermediate testing	15 points / 15%	By the end of week 14
4.	Performing and defending laboratory work	15 points / 15%	8-14 week
5.	Completion of an individual assignment/course (non-formal education)	5 points / 5 %	8-14 week
6.	Exams	30 points / 30 %	Exam week

5.2.2 Evaluation criteria

Component	Unsatisfactorily	Satisfactorily	Good	Excellent
Interview	<3 points	3-5	6-8 points	9-10 points
	Task requirements don't met	Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	All requirements of the task are fulfilled...	All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered
Solving of situational tasks	<3 points	3-5	6-8 points	9-10 points
	Task requirements don't met	Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue	All requirements of the task are fulfilled, the situational task is solved completely, the report is made	All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered
Presentation with a report	<3 points	3-5	6-8 points	9-10 points
	Task requirements don't met	The presentation is prepared, but the report is vague, not logical	All the requirements of the task are met, the report and presentation meet the requirements	All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution is offered
Protocols of laboratory training	<5 points	5-10	11-15	16-20
	Task requirements don't met	Most of the requirements are met, but there are minor violations of the methods	The task is done correctly	All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution is offered
Multiple choice tests	<2 points	2-9	10-13	14-15
	Less than 3 correct answers	3-7 correct answers	8-9 correct answers	All correct answers

Formative assessment:

№	Elements of formative assessment	Date
1.	Written survey after studying the topics with feedback from the teacher	15 minutes at the end of the lesson at the end of the study of the topic
2.	Oral feedback from the teacher while working on situational tasks during classes	next lesson after learning a new topic
3.	Oral feedback from the teacher and students after the presentation with the report	10-15 weeks
4.	Express survey with peer review by students	before the each laboratory trainings
5.	Final test control with feedback from the teacher	at the end of each topic

6. LEARNING RESOURCES (LITERATURE)

6.1 Main sources

1. DSTU ISO 10018:2021 Quality management. Guidelines for personnel involvement. 2021
2. Bocharova O.V. Development of a HACCP system for the catering industry using a "horizontal" approach: textbook / O.V. Bocharova. – Odesa: Atlant, 2024. – 140 p.
3. Bolgova N.V. Food safety management according to the principles of the HACCP system: textbook / N.V. Bolgova, M.M. Samilyk, Yu.V. Nazarenko, T.P. Synenko, V.I. Tyshchenko, Guba S. O. – Sumy: 2025. – 418 p.
4. Kiyko V.V. Quality management systems at food industry enterprises / V.V. Kiyko, O.P. Melnyk, O.V. Kuzmin, Oldi+, 2023. – 278 p.
5. Luning, P. A., & Marcelis, W. J. (2020). *Food Quality Management: Technological and Managerial Principles and Practices*
6. Corporation, I.F. (2020). *Food safety handbook: A Practical Guide for Building a Robust Food Safety Management System*. World Bank Publications.
7. Detwiler, D. (2020). *Food safety: Past, Present, and Predictions*. Academic Press.
8. Meyer, N. (2025). *HACCP and Beyond: Food Safety and Sanitation Manual*. Kindle Edition

6.2 Additional sources

9. Awuchi, C.G. (2023). HACCP, quality, and food safety management in food and agricultural systems. *Cogent Food & Agriculture*, 9(1). <https://doi.org/10.1080/23311932.2023.2176280>
10. Lorenzo, L. C. (2024). *HACCP system Auditing for food safety: Principles and Techniques*. John Wiley & Sons.
11. Kalycheva, N. E., Kutsenko, N. M., & Godunov, F. A. (2023). Quality management of food industry products. *Visnik Ekonomiki Transportu i Promislovosti*, 84, 175–182. <https://doi.org/10.18664/btie.84.301467>
12. Watson, R. R., & Preedy, V. R. (2015). *Genetically modified organisms in food: Safety, Production, and Regulation*. Academic Press.
13. Kondratyuk N. V., Stepanova T. M., Kozhemyaka O. V., Suprunenko K. E. (2021). System of technical regulation and conformity assessment of Ukraine and the PRC. Comparative analysis of legislation on product quality and safety. *Scientific Bulletin of Poltava University of Economics and Trade. Series "Technical Sciences"*, 96(1), 82-88. <https://doi.org/10.37734/2518-7171-2020-1-10>
14. Stepanova, T. M., Gelikh, A. O. (2021). Formation of culinary brands of Sumy region as a component of the region's hospitality. *Tourism and hospitality industry in Central and Eastern Europe*, (3), 44-48. <https://doi.org/10.36477/tourismhospcee-3-7>

15. Uzoigwe, D. O., & Kongolo, D. (2024). Integration of Hazard Analysis and Critical Control Points HACCP with Maintenance Practices: Enhancing Food Safety in the Food and Beverage Industry; A Review. *International Journal of Latest Technology in Engineering Management & Applied Science*, *XIII*(IV), 88–101. <https://doi.org/10.51583/ijltemas.2024.130411>

Software

Software (to support distance learning (Moodle), online surveys (Kahoot, LearningApp), etc.