

Ministry of Education and Science of Ukraine  
Sumy National Agrarian University  
Faculty of Food Technology  
Department of technologies and food safety

Work program (syllabus) of the educational component

*вудіпроблем*

**SCI. UNTRADITIONAL  
FOOD RAW MATERIALS**

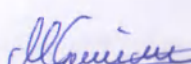
<b>Specialty</b>	181 "Food technologies"
<b>Educational program</b>	Food technologies
<b>Level of higher education</b>	Doctor of philosophy

Developer: **M.M. Samilyk**, Doctor of technical science, Associate Professor, Head of the Department of Food Technologies and Food Safety

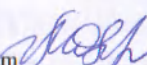



**Helikh A.O.**, Ph.D., Associate Professor of the Department of Technology and Food Safety

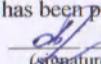
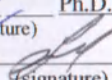
(surname, initials) (degree and title, position)

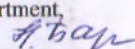
Considered and approved at the meeting of the Department of <u>Technology and Food Safety</u>  (name of department)	protocol from <u>04.06.2024</u> No. <u>17</u>
	Head department <u></u> <b>Marina SAMILYK</b> (signature) (surname, initials)

Agreed:

Guarantor of the educational program  Oksana MELNYK  
(signature)

Dean of the Faculty,  
where the educational program is implemented  Nataliia BOLHOVA  
(signature)

A review of the work program has been provided  
 Ph.D., Assoc. Prof. Tatyana SYNENKO  
(signature)  
 Ph.D., Ph.D., Assoc. Prof. Vasyi TYSHCHENKO  
(signature)

Methodist of the Education Quality Department,  
licensing and accreditation  N. Baranik  
(signature)

Registered in the electronic database: date: 09.07. 2024.

Information on revision of the work program (syllabus):

The academic year in which changes are made	The number of the appendix to the work program with a description of the changes	The changes were reviewed and approved		
		Date and number of the protocol of the meeting of the department	Head of Department	Guarantor of the educational program

Topic. List of issues to be considered within the topic	Distribution within the general time budget			Recommended Books <sup>2</sup>
	Auditory work		Individual	
	Lectures	Practice		
<b>Lecture session 3.</b> Characteristics of non-traditional raw materials and ingredients of animal origin	2			[9], [10], [12], [11], [4]
<b>Laboratory lesson 3 .</b> To make an analysis of non-traditional food animal raw materials of regional importance	.	2		
<b>Lecture session 4.</b> Non-traditional raw materials and ingredients in the technologies of milk processing products	2			
<b>Laboratory session 5.</b> Formulation of a dairy product using non-traditional raw materials		2		[20,21, 23]
<b>Laboratory session 6.</b> Development of a dairy product manufacturing technology using non-traditional raw materials				
<b>A question of independent study</b> 1. Application of hydrobionts in food production. 2. Use of exotic animals in food production			30	
<b>Lecture session 5.</b> Non-traditional raw materials and ingredients for the production of meat and fish products	-			[9],[ 10],[12]
<b>Laboratory session 7.</b> Development of a clear product recipe using non-traditional raw materials		2		
<b>Laboratory lesson 8.</b> Development of the technology of manufacturing a clear product using non-traditional raw materials				
<b>Total per module</b>	<b>6</b>	<b>6</b>	<b>60</b>	
<b>Module 2</b>				
<b>Lecture class 6.</b> Non-traditional raw materials and ingredients for the production of bakery products	2			[5],[ 13],[14]
<b>Laboratory class 9 .</b> Development of a recipe for a bakery product using non-traditional raw materials				
<b>Laboratory lesson 10 .</b> Development of technology for the production of bakery products using non-traditional raw materials				
<b>A question of independent study</b> 1. Non-traditional raw materials and ingredients in fruit and vegetable production technologies 2. Non-traditional raw materials and ingredients in the technologies of grain processing products			35	



Topic. List of issues to be considered within the topic	Distribution within the general time budget			Recommended Books <sup>3</sup>
	Auditory work		Individual	
	Lecture	Practice		
<b>Lecture session 7.</b> Non-traditional raw materials and ingredients for the production of confectionery products	2			[15] , [19]
<b>Laboratory class 11 .</b> Development of a recipe and technology for the production of confectionery products using non-traditional raw materials				
<b>Lecture class 8.</b> Non-traditional raw materials and ingredients for the production of alcoholic beverages	2			[ 16 ], [ 17 ], [ 18 ],
<b>Laboratory lesson 12 .</b> Development of the recipe and production technology of an alcoholic drink using non-traditional raw materials		2		
<b>Lecture session 9.</b> Non-traditional raw materials and ingredients for the production of non-alcoholic beverages				
<b>Laboratory lesson 13 .</b> Development of the recipe and production technology of a non-alcoholic drink using non-traditional raw materials		2		
<b>A question of independent study</b> 1. The use of exotic animals in the production of alcoholic beverages. 2. Use of non-traditional raw materials in the production of fermented beverages.			35	[25]
<b>Lecture class 10.</b> The use of insects in the production of food products				[20] , [21]
<b>Laboratory session 14 .</b> Development of a recipe and manufacturing technology of a food product using insect processing products				
<b>Laboratory class 15 .</b> Development of a presentation on the topic "Application of non-traditional food raw materials in the production of food products"				
<b>Total per module</b>	<b>4</b>	<b>4</b>	<b>70</b>	
<b>In total</b>	<b>10</b>	<b>10</b>	<b>130</b>	

#### 4. TEACHING AND LEARNING METHODS

DRN	Teaching methods	Number of hours	Teaching methods	Number of hours
DRN1. Formation of the necessary complex of knowledge modern technologies of processing, storage and waste-free use of raw materials of various origins	Lectures-presentations with the demonstration and use of interactive technologies	2	Elaboration of lecture notes and methodical recommendations for independent study of disciplines.	40

			Practical classes with presentation of performance methods	10
DRN 2. Implement your own ideas in the technology of food products from non-traditional raw materials and ingredients or in combination with them to obtain products of increased nutritional and biological value.	Lectures-presentations with the demonstration and use of interactive technologies	4	Elaboration of lecture notes and methodical recommendations for independent study of disciplines. Practical classes with presentation of performance methods	30
DRN3. The ability to scientifically justify the effective use of non-traditional types of raw materials in food technology	Lectures-presentations with the demonstration and use of interactive technologies	4	Elaboration of lecture notes and methodical recommendations for independent study of disciplines. Practical classes with presentation of performance methods	30

## 5. EVALUATION BY THE EDUCATIONAL COMPONENT

### 5.1. Summative assessment

5.1.1. To assess the expected learning outcomes, it is provided

No	Methods of summative assessment	Points / Weight in the overall assessment	Compilation date
<b>Module 1 (35 points)</b>			
1.	Testing "Module 1".	27 points / 27%	7 week
2.	Submitting a report on practical work	8 points / 8%	According to the schedule of the educational process
<b>Module 1 (35 points)</b>			
3.	Testing "Module 2"	26 points / 26%	14 week
4.	Submitting a report on practical work	7 points / 7%	According to the schedule of the educational process
5.	Examination testing	30 points / 30%	15 tons a week

5.1.2. Evaluation criteria

Component <sup>4</sup>	Unsatisfactorily	Satisfactorily	Fine	Perfectly <sup>5</sup>
	<60 points	60-74 points	75-89 points	90-100 points
Testing Module 1	<i>The test includes 35 questions, each of which is worth 1 point</i>			
Submitting a report on practical work	<i>Each completed practical work is valued at 1 point</i>			

<sup>4</sup> Specify the summative assessment component

<sup>5</sup> Specify the distribution of points and the criteria determining the level of assessment

Testing Module 2	<i>The test includes 35 questions, each of which is worth 1 point</i>
Examination testing	<i>The test includes 30 questions, each of which is worth 1 point</i>

### 5.2. Formative assessment:

To assess the current progress in learning and understand the directions for further improvement is provided

No	Elements of formative assessment	Date
1	Feedback in the form of a discussion of testing "Module 1"	According to the schedule of the educational process
2	Feedback in the form of a discussion of the results of the practical work performed	According to the schedule of the educational process
3	Feedback in the form of a discussion of testing "Module 2"	According to the schedule of the educational process
4	Feedback in the form of discussion of examination testing	15 week

The final control form is *an exam*. The final number of points in the discipline (maximum 100 points per semester) is determined as the sum of points based on the student's work during the semester.

## 6. EDUCATIONAL RESOURCES (LITERATURE)

- Golovko T. M., Pogozhik M. I., Golovko M. P., Prymenko V. G., Helikh A. O. Scientific justification of the technologies of dietary supplements and food products enriched with essential mineral substances: monograph. Kharkiv: DBTU, 2023. 297 p.
- Samilyk M. M. Sustainable food chain and safety through science, knowledge and business (Powders from derivatives of wild plant fruit processing): Scientific monograph / Samilyk M. M. Demydova Ye. V. – Riga, Latvia : "Baltija Publishing", 2023. 724 p. ISBN 978-9934-26-328-6.
- Samilyk, M. (2022). Scientific substantiation of the use of plant processing derivatives for enrichment of ferrous milk drinks. EUREKA: Life Sciences, 5, 58–64.
- Samilyk, M., Qin, X., & Luo, Y. (2021). The influence of the introduction of rice bran on fermented milk drink. Scientific Messenger of LNU of Veterinary Medicine and Biotechnologies. Series: Food Technologies, 23(96), 39-45.
- Marina M. Samilyk, Evgenia V. Demidova, Natalia V. Bolgova (2022). Waste-free technology of processing wild plant raw materials. Journal of Chemistry and Technologies, 30(3), 394-403. <https://doi.org/10.15421/jchemtech.v30i3.256924>.
- Samilyk M, Bolgova N, Tsyryuk R, Ryzhkova T. Prospects for processing and use of root vegetable waste in food production. Food science and technology. 2021;15(4):60-68. <https://10.15673/fst.v15i4.2253>.
- Самілик, М., & Демидова, Є. (2022). Використання нетрадиційної сировини у технології виробництва йогурту. Ресторанний і готельний консалтинг. Інновації, 5(2), 281–291.
- Рижкова, Т. М., Самілик, М. М., Болгова, Н. В., Губа, С. О., & Соколенко, В. В. (2023). Удосконалення технології сиркових мас із використанням порошку калини. Вісник Сумського національного аграрного університету. Серія: Механізація та автоматизація виробничих процесів, (3 (49)), 69-74. <https://doi.org/10.32845/msnau.2022.3.10>



9. Samilyk, M., Bolgova, N., Samokhina, E., Cherniavska, T., & Kharchenko, S. (2024). Use of hop extract in the biotechnology of kefir beverage. *Scientific Horizons*, 27(3), 97-106. doi: 10.48077/scihor3.2024.97.
10. Пасічний В. М., Божко С.Б, Тищенко В. І., Самілик М. М., Божко Н. В. (2022). Дослідження споживчих і функціонально-технологічних показників напівкопчених ковбасок на основі баранини, виготовлених з використанням м'ясо індійського та протеїну насіння коноплі. *Наукові праці НУХТ 2022. Том 28, № 6. С. 115-124*
11. Samilyk, M., Demidova, E., Nazarenko, Y., Tymoshenko, A., Ryzhkova, T., Severin, R., Hnoievyi, I., Yatsenko, I. (2023). Formation of the quality and shelf life of bread through the additive of powder from rowanberry. *Eastern-European Journal of Enterprise Technologies*, 3 (11 (123)), 42–49. doi: <https://doi.org/10.15587/1729-4061.2023.278799>.
12. Підвищення харчової цінності хлібобулочних і борошняних кондитерських виробів. монографія / Н.П. Буяльська, О.Л. Гуменюк, Н.М. Денисова, В.М. Челябієва.– Чернівці : ЧНТУ, 2020.– 122 с.
13. Тищенко, В. І., & Божко, Н. В. (2023). Аналіз сучасних трендів у виробництві безалкогольних напоїв із використанням нетрадиційної рослинної сировини. *Таврійський науковий вісник. Серія: Технічні науки*, (1), 114-124. <https://doi.org/10.32851/inv-tech.2023.1.12>.
14. Сорокіна, С. В., Колесник, В. В., Полупан, В. В., Акмен, В. О., & Penkina, N. M. (2022). Використання нетрадиційної сировини під час виробництва слабоалкогольних напоїв. *Таврійський науковий вісник. Серія: Технічні науки*, (5), 90-97. <https://doi.org/10.32851/inv-tech.2022.5.12>
15. Майкова, С., Вівчарук, О., & Бомба, М. (2021). Перспективи виготовлення страв з профілактичними властивостями із введенням нетрадиційної сировини. *Innovations and Technologies in the Service Sphere and Food Industry*, (1-2 (3-4)), 66-74. [https://doi.org/10.24025/2708-4949.1-2\(3-4\).2021.242689](https://doi.org/10.24025/2708-4949.1-2(3-4).2021.242689)
16. Головка Т. М., Погожих М. І., Головка М. П., Применко В. Г., Геліх А. О. *Наукове обґрунтування технологій дієтичних добавок та харчових продуктів, збагачених на есенціальні мінеральні речовини : монографія*. Харків: ДБТУ, 2023. 297 с.
17. Серєда О. Органолептичний аналіз бісквіта круглого з додаванням білковомісної сировини [Електронний ресурс] / О. Серєда, О. Мельник // *Ресторанний і готельний консалтинг. Інновації*. – 2023. – Т. 6, № 1. – С. 125-139.
18. Серєда, О. ., & Мельник, О. . (2022). Новий вид функціональної сировини з підвищенням вмістом білку для бісквітних виробів. *Технічні науки та технології*, (2(28)), 102–110. [https://doi.org/10.25140/2411-5363-2022-2\(28\)-102-110](https://doi.org/10.25140/2411-5363-2022-2(28)-102-110).
19. Грушецький, Р., Грінєнко, І., & Хомічак, Л. (2023). Перспективна рослинна сировина для нових ферментованих напоїв. *Ресторанний і готельний консалтинг. Інновації*, 6(1), 50–66. <https://doi.org/10.31866/2616-7468.6.1.2023.278471>.
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21. Feng Y, Chen XM, Zhao M, He Z, Sun L, Wang CY, Ding WF. Edible insects in China: Utilization and prospects. *Insect Sci*. 2018 Apr;25(2):184-198. doi: 10.1111/1744-7917.12449.